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Vol. XVII GRAND RAPIDS, MICHIGAN, DECEMBER, 1918 No. 12

Original Articles

A FORTNIGHT IN A FIELD HOSPITAL.

MAJOR ALEXANDER MACKENZIE CAMPBELL,
Medical Corps, U. S. A.,
Chief of Surgical Service.
PARIS, FRANCE.

(American Red Cross Military Hospital No. 5, Paris, France.)

On June 20th, 1918, the writer with two other surgeons from the above named organization, received orders to proceed to Field Hospital "X" for the purpose of observing the methods of surgical treatment employed in the care of American soldiers. The hospital was located but a few miles from the firing line and received only the most seriously injured. Some of the soldiers arrived within three hours after they had been wounded and had only received some first aid attention at a dressing station, such as the application of a haemostat or a tourniquet. Others were unfortunate enough to have lain out in 'No Man's Land' until their serious wounds were so badly infected that they were beyond the help that surgery could have afforded.

The cases received were practically limited to major injuries of the head, chest, abdomen and thigh.

The hospital which contained only a little over a hundred beds, had been taken over from the French, only about a month previous to our visit. It had been a civilian hospital and was managed by the nuns who also prepared the food for the patients. It was an old three-story cement structure which lacked nearly all the conveniences of a modern hospital, but it was beautifully situated in the middle of a garden or court covered with flowers and shrubbery. Supplementing the hospital proper, were a number of Bessoneau tents which were used for various purposes. One tent was used for a recovery ward; one for a pre-operative and treatment ward; one for post-operative cases; and others for the pharmacy, laboratory, supplies, etc.

In the pre-operative tent, patients were placed on improvised super-heated beds and were gotten, when possible, into operative condition. In the corner of this tent was a small X-ray room, darkened with army blankets. By the use of the Fleuroscopic screen, foreign bodies were oriented with a satisfactory degree of accuracy.

In this tent were also the apparatus and instruments for the transfusion of blood. A very simple microscopic method of making haemolytic tests was employed by the use of known sera, number two and three (using the Moss grouping). Blood was usually furnished by the comrades of the exsanguinated soldiers, inasmuch as the drain upon the hospital personnel would have been hazardous. During the visit, another officer and myself motored ten miles to the American rest camp to obtain a supply of blood for our field hospital patients. We tested haemolytically, fifteen soldiers and obtained four litres of blood which was most cheerfully given. The blood was drawn in the usual way and collected in sterile flasks which contained a hundred cc.'s of normal saline solution, to which were added the contents of a regulation ampule of a solution of citrate of sodium. Blood citrated in this manner will keep for forty-eight hours or longer. It was administered intravenously by a simple gravity apparatus. We observed many cases whose lives might have been saved had blood transfusion been performed before their operation, and we observed many post-operative cases who were veritable "washouts," in whom transfusion would have been a life-saving procedure.

The operating room was sparsely furnished, and presented a very gloomy appearance. There were three operating tables arranged so that three surgical teams could work at the same time. Each team was on service for eight hours. One clean nurse attended the three operating tables and kept a small table adjacent to each operator supplied with the necessary

instruments. This nurse also threaded the few ligatures that were necessary during the course of the day. Each head of the surgical team had one medical assistant. The instruments were few and of poor quality, and the natural and artificial light was inadequate.

At first it was singular to observe that practically no wounds were closed, and on the wall of the operating room, printed on a rough piece of board, were the unmistakable words "Suture no Wounds."

The writer will never forget his impressions on the morning of his first visit to the operating room. A convoy of wounded had arrived early in the day and the hospital was a very busy place. The three surgical teams were working under high pressure in operating soldiers who were terribly wounded. On the floor of the operating room was a huge pile of blood-stained dressings and the sickening odor of fresh, warm blood bore silent, yet obvious testimony to the sacrifice which our American boys are making. It occurred to the writer that if this picture could have flashed across the Atlantic to America, it would have expelled every vestige of indifference that could possibly have existed among our home people, concerning the seriousness of the war.

The physician, fresh from civil life has his surgical sensibilities somewhat shocked when he first enters the operating theater in a busy field or evacuation hospital during a big drive. He soon observes that learning to do military surgery is almost like learning a new language; that some of its principles are revolutionary and that it is a great specialty in itself, which is divided into many specialties, and which can not be learned or mastered quickly or easily.

As a basis he must have a thorough knowledge of anatomy, especially as it pertains to the muscular, nervous and arterial systems. In addition to that he must have well in mind the general principles which govern the treatment of wounds that are being inflicted during the present war, and he furthermore must have a clear-cut conception of the most approved methods of dealing with major injuries of the head, chest and abdomen, all of which are attended with a very high mortality at the present time.

Our two weeks' visit at this hospital permitted us to make a short, but intensive study of this subject.

We observed that in war injuries the most serious infections result from wounds which are caused by the bursting of shells. These shell fragments, which are irregular in shape, may vary in size from a millet seed to a silver dollar. They may be found singly or in any number. On entering the body they carry with them infected clothing and it has been observed that the outside clothing, which is most virulently infected, is most liable to be present. On the other hand shrapnel bullets and machine gun bullets, which are smooth and regular in their outline, produce wounds that are not nearly so subject to serious infection. Therefore, the surgical treatment of war wounds depends to some considerable extent upon the character of the missile which has produced them.

One of our first observations was that the surgical principles employed in this hospital were based on the well known fact that all war wounds are infected, and therefore operation by debridement was performed at the earliest possible moment.

The term debridement permits of some explanation, for it is the Alpha and Omega of the whole treatment. It means the removal by careful incision and disection of all infected devitalized and necrotic tissue, which has resulted from the injury which the foreign body has produced. It may mean the simplest procedure applied to a very minor war wound, or it may mean one of the most difficult and formidable operations in surgery. It embraces the removal of all infectious material, commensurate with safety to the soldier's life, whether that material be portions of brain, bone, muscle or other body tissues. The debridements performed in this hospital were very extensive in character for it was realized that the track of the missile into or through the body is not always a true index to the amount of traumatism that is produced. Injury and infection may occur in parts of structures that are beyond the sight of the eye, or the reach of the scalpel. In spite of debridements which appeared to be very thoroughly performed a number of cases died from infection.

Great care was taken to preserve, when possible, nerves, arteries, tendons and skin. One was continually reminded of the fact that the military surgeon must be well grounded in his knowledge of anatomy. He must also have the happy combination of intelligent respect for tissues coupled with the surgical boldness to attack areas and remove foreign bodies which may be situated in very dangerous parts of the body, no part of which is immune to injury and infection.

As a rule, long and extensive incisions were made in the longitudinal axis of the limb, and at times ladder incisions were necessary to procure a thorough debridement. In compound fractures of the femur, for instance, where the missile had shattered the bone and where as a result minute particles of the bone were driven into the muscle producing secondary injury and infection, very extensive and deep incisions were employed and it was necessary in some instances to expose the femoral vessels and sciatic nerve at considerable lengths.

Owing to the rush of patients and the consequent time consumed in operating, in the great majority of cases absolute haemostasis was not obtained. The extensive wounds were packed with plain gauze, which was removed within twenty-four hours, and Carrell tubes and Dakinization were substituted.

So far as the after treatment was concerned, the wounded did not stay long enough in the field hospital to admit of prolonged observation. However an attempt was made to carry out the Carrell-Dakin treatment. In October last year, it was the writer's great privilege to have taken Carrell's course of instruction at the Rockefeller War Demonstration Hospital, and it was most interesting to observe that nearly all the surgical principles that were demonstrated at that institution with such excellent technique and surgical finesse were embodied in the practical work in the field hospital, but it was regrettable that the exact treatment was impossible of execution because of the lack of facilities for making Dakin's solution and administering it properly. In spite of the fact that the whole Carrell-Dakin idea was carried out imperfectly in this hospital, the surgeons seemed to agree that the results they obtained from it, even the imperfect, justified a continuance of its use. The writer is convinced that Dakin's solution properly prepared and properly administered, stands to-day as the most efficient preparation that has been devised to combat infections incident to the present war. But observation and actual experience at the operating table convince him more and more that thorough removal of all infected material by early operation without addition to already existing trauma is the great and important desideratum. There is no question, however, but what some easily prepared antiseptic agent would be of value if it could be used on war wounds as soon as they are inflicted.

A few general remarks concerning the treatment of major injuries of the head, chest, abdomen and thigh might be of interest. In head injuries all operative measures were preceded by X-ray examination. As in civil life brain lesions of varying degrees of severity were observed. The general attitude toward operative interference was conservative, and was largely based upon the urgency and progressiveness of pressure symptoms. As in other parts of the body, debridement was performed if the injury was due to bursting shell. The wounds in the scalp and skull and brain were carefully incised and in comminuted skull fractures all loose particles of bone were removed and the fracture edges were debrided. Foreign bodies were not removed unless easily accessible and unless their removal could be accomplished without any more traumatism than was produced in their trajectory. The dura was not opened if it was not lacerated. Cases of extra dural hemorrhage, invariably due to injury of the middle meningeal artery, were treated by the removal of the blood-clot and hemorrhage controlled by ligation. Trephining was rarely necessary because the opening in the skull usually made it possible to use craniectomy forceps. Portions of infected brain were carefully incised and rubber tissue was used for drainage, which were extended to, but not through the dura. Unfortunately the mortality in these cases was very high, especially where it was necessary to work hastily and to explore extensively. With few exceptions, all the operative cases that we observed went on to a fatal termination.

Injuries to the chest produce about forty per cent. of the actual deaths that occur on the battle-field, and a high percentage of the chest cases that live to reach the field or evacuation hospital die whether submitted to operation or not. In this field hospital it was the rule to operate immediately upon all sucking wounds of the chest. After excision of the tissued at a point of entrance and exit of the foreign body, after removal of rib fragments in case of comminuted fracture, all wounds of the pleura were closed by primary suture. These patients exhibited a marked degree of discomfort and anxiety, until the pleural cavity was closed. It was observed that the pleura itself was very difficult to suture because it is so brittle, but if it is impossible to close it alone, a satisfactory closure can be made by the use of muscles and skin. These wounds were usually closed without drainage. In cases where large foreign bodies were lodged in the pleural cavity, rib

resection was performed, hemorrhage stopped and the hand placed in the pleural cavity from which the foreign body was removed and the cavity closed. While we did not see any cases operated upon who had large foreign bodies in the lung itself, their method of procedure was to open the pleural cavity, deliver a portion of the lung, remove the foreign body, excise the damaged and infected part of the lung, and close without drainage. Through and through wounds of the chest made by machine gun bullets were usually put under expectant treatment, and in cases of haemothorax, unless the respiratory function was sufficiently embarrassed, aspiration was not performed for several days.

In gun shot wounds of the abdomen, we observed the necessity of very early operative interference. It was usually easy to determine a lesion of some abdominal organ. We observed nearly every variety of injury to abdominal viscera. The majority of cases were operated on within twelve hours after injury and the mortality exceeded seventy-five per cent. We did not see an intestinal resection performed at the field hospital, and it was not uncommon to observe cases in which there were a number of perforations in the intestines. These perforations were simply closed by purse-string and Lembert sutures. Spleenectomy and nephrectomy were performed in a few instances and in hemorrhage from the liver the wound was usually packed with gauze without attempt to remove the foreign body. It was surprising to observe the small amount of injury produced by some foreign bodies that entered the abdomen, and the great amount produced by others. It was stated that a foreign body may pass entirely through the abdomen without injury to tubular or solid organs. In a thoraco-abdominal injury an incision was made over the wound, the ribs were resected down to the diaphragm, which was excised where the missile had passed through it; the foreign body was removed, the abdominal organs were sutured and the pleural cavity was closed without drainage. Many of the cases of gunshot wound of the abdomen were in severe shock by the time they reached the field hospital, and it is not surprising that the mortality following operation was extremely high.

Another class of very serious cases was that of severity lacerated and severely comminuted fractures of the thigh. In these injuries there was frequently a great loss of both soft and bony tissues resulting in hemorrhage and shock. Fractured femurs were usually transported in Thomas' splints which seemed to be the best apparatus that could be obtained for purposes of conveyance. It was not uncommon to observe a well advanced case of gas gangrene complicating a compound fracture of the thigh. In such cases, amputation was immediately performed by the guillotine method, and the stump was left entirely open. When embolism of the femoral or popliteal arteries irreparably impaired the circulation, amputation was also performed. When the leg was found to be fractured and greatly lacerated, the wounds were thoroughly debrided, which often required an operation lasting two hours. All infected bone was removed at the seat of fracture, and all pieces of bone fragments that were loosely attached, were removed. Operative procedure often required incisions on either side of the leg, extending from the hip to the knee and the added shock was so severe that in some instances, death occurred on the operating table. In the cases which recovered after operation, the limb was replaced in a Thomas' splint.

Gas gangrene, which may well be called the Bete Noire of the military surgeon, occurred quite frequently, and as soon as it was detected, operation was performed. Gas gangrene is essentially a disease of the muscles, and the operations consisted in incising the diseased portions and in some instances completely extirpating entire muscles. In the extremities, when the disease was found to be making rapid progress toward the body, amputation was performed. Death has been known to occur in twelve hours after infection, so it is obvious why operation was performed in these cases as soon as the diagnosis was made. The only hope for these cases was in early surgical interference which stopped the progress of the disease in many instances. We were impressed with the necessity of making a close study of the early symptoms of gas gangrene so that it might be checked, for it is most amenable to early surgical treatment.

Reflecting upon this very interesting visit, and upon some personal experience in war surgery, where theories have been applied to actual work at the operating table, the following conclusions have been reached.

CONCLUSIONS.

1. Military surgery, well performed, is a difficult art.

2. In the treatment of war wounds in the Zone of Advance, the surgeon must learn to

adapt himself to a very different environment and a very different type of surgery than are seen in civil practice.

3. A thorough knowledge of anatomy and an economical attitude toward the conservation of tissue are essential, in order to preserve important structures.

4. Thorough debridement must be accomplished in every case where the injury is caused by fragments of exploded shell.

5. The value of various antiseptics used in post-operative treatment, while of interest, is insignificant compared with the importance of early and thorough operation which removes from the wound every particle of devitalized and infected material.

RESUME OF FIVE YEARS OF THE BUTTERWORTH ORTHOPEDIC CLINIC.

WILLIAM E. BLODGETT, M.D.,
DETROIT, MICHIGAN.

In March, 1913, the Butterworth Orthopedic Clinic was established, through the kindness of your staff, in response to a need for this kind of work, which was already manifested by a considerable number of cases in Grand Rapids then under my care.

Since then the Clinic has met twice a month, the first and third Fridays, with only a few exceptions. Last year there was no variation in the twenty-four meetings. The attendance has gradually increased so that last year the total attendance was 505; the average attendance 21; the maximum attendance 28; and the minimum attendance 13. Last year there was a total of 121 new patients, and 39 operations, as follows:

Infantile Paralysis, 13; Congenital Club Foot, 8; Tuberculous Joints and Bones, 5; Congenital Dislocation of the Hip, 4; Spastic Paralysis, 2; Torticollis, 2; Miscellaneous, 5.

The Clinic is indebted to Dr. Vyn of Grand Rapids, and Miss Ida Hall, graduate nurse, for assistance at the Clinic meetings and for caring of the work between meetings. It is to be noted that, considering the number of meetings, this Clinic is a very rich and large one, unsurpassed in the State, or for that matter probably unsurpassed except by one or two clinics in any of the adjoining states. Out of this really large amount of material I have selected for special mention the two operative conditions in which we have had the largest Grand Rapids experience, namely, infantile paralysis and congenital club foot.

The care of infantile paralysis is, to my mind, rightly considered orthopedic from the cessation of the acute symptoms of the infection, and as soon as the diagnosis of paralysis is made the case becomes essentially orthopedic, meaning by that, a case in which preservation or restoration of function of the locomotor and supporting apparatus is the chief consideration. As long as there is any tenderness in the muscles and usually for two months after the onset, rest of the involved parts is indicated. The common contractures are guarded against by supporting the feet while in bed, or while sitting, from long remaining in the plantar-flexed position. The knees and the hips also are kept part of the time fully extended. The parts are kept warm and massaged or rubbed, but never to produce pain. After the expiration of two months, more vigorous measures are undertaken, and passive and active motions are begun. This marks the beginning of the opportunity for so-called muscle training, which is nothing more than assisting the patient to making definite movements, the very movements which it is difficult for him to make. It is believed that in this way the central nervous cells can be to some extent re-educated so as to be substituted for the diseased ones or to favor their restoration. At this time also the matter of braces comes up for consideration.

A brace is a device for favoring function, usually a means of enabling the patient to walk, and to some extent a means of preventing contractures. It should be borne in mind that every brace through constriction and weight does harm, and it is only when the brace does more good than harm that we should advise or use a brace. Often the best arrangement is the use of a brace for short periods and the removal of it during the longer rest periods, to favor nutrition. It must be admitted that the orthopedic surgeon often finds patients are being weighted and restricted by braces that are certainly doing more harm than good. It is ordinarily unwise to allow the brace maker to use his own discretion in prescribing for the patient. If the doctor is not acquainted sufficiently with brace possibilities to measure for and design the brace himself, and thus prescribe the brace as he would prescribe medicine, he can at least discuss the matter with the brace-maker and in this way the efficiency of each can be increased by the knowledge supplied by the other. In general, the brace should be

as simple as possible to effect the definite indications that are required.

Nearly all operating in infantile paralysis is postponed until after two years from the onset, the two years being the period in which nature can be expected to make restoration. Certain operations, however, like the support of the head of the humerus to the acromion, thus relieving the strain of the weight of the arm from the weakened or inactive deltoid, are indicated before the expiration of this period, as a help to nature, but any operation which assumes the permanent disability of a muscle should not be undertaken until these two years have passed. Mild contractures of the tendo-Achillis or of the hamstrings are best met at this early stage by stretching in plaster paris rather than by section.

Once we are confident that the essential paralysis is fixed and not subject to further natural improvement, we have a large variety of resources to restore function to the affected parts. It is manifestly impossible to speak in detail of many of these operations, but I desire to refer to two particular lessons which our work in Grand Rapids might illustrate.

One is the disadvantage of lengthening every shortened tendo-Achillis. I would say that in certain cases lengthening of the tendo-Achillis to conform to normal conditions does vastly more harm than good. If the extensor muscles of the knee are weak a mild degree of shortness of the tendo-Achillis is a decided advantage in supporting the knee against flexion. The explanation of this is that with the sole splinted against the floor and the tendo-Achillis somewhat short the tibia is forced to assume a position slightly back of the perpendicular to the plane of the floor, thus tending to hyper-extend the knee and hold it locked under the superincumbent weight, being in this way mechanically similar to the action of the knee in the artificial leg. This action is of great advantage to the weakened quadriceps extensor muscle, and in fact enables in certain cases the patient to walk without support and without falling even when the quadriceps extenson is completely paralyzed. As far as I know, this observation has never been given prominence before.

The other lesson from our work in infantile paralysis is the excellent functional result in a foot otherwise practically unusable because of extreme and extensive paralysis of the leg muscles, from the operation of astragalectomy and the displacement backward of the tarsus under the tibia and fibula. By this operation there is produced a foot permanently stable against lateral motion and yet allowing a useful amount of antero-posterior motion. This operation will save many feet from amputation and gives a result which is as permanent as it is eminently satisfactory. This operation was first brought forward by Dr. Royal Whitman and has many warm advocates. I myself have performed this operation about forty times.

The proportion of congenital club foot cases in Grand Rapids has been greater than in the Detroit work, as last year in thirty-nine operations we operated on eight club foot cases.

The lesson I desire to mention in this connection is the advantage of overcoming the adduction of the foot in front of the medio-tarsal joint before the correction of the equinus; in other words, the front foot is drawn laterally outward while the toes still point downward. This correction is ordinarily best produced by simple stretching and unless this part of the deformity is thoroughly over-corrected before the equinus is overcome, the probability is that the patient will never have a straight sole but will always show the curve of the sole with the convexity outward, which is the commonest imperfection of result. Accordingly, we now always apply at least one preliminary corrective plaster, even in infants, thus overcoming the adduction of the fore-foot in the way described. Thorough insistence upon this preliminary work has recently enabled us to satisfactorily over-correct the deformity without any bone operation, such as we at first thought would be necessary. The whole principle, of course, in the correction of club foot is the wide over-correction of club foot, and the maintenance of this over-correction until such time as the deforming tendency of club foot is worn out. Club foot is not only a fixed deformity but is to be regarded an active deforming tendency, and if not so considered disappointing relapse is sure to occur. The younger the patient the easier to attain over-correction and the longer it is necessary to maintain over-correction, in order to overcome the deforming tendency. This deforming tendency is often best offset by night rather than day braces, thus allowing free use of the foot with the minimum of restraint in the day time, and correspondingly strengthening and adjusting the foot to its normal function.

The best time for operating in club foot cases is at about eight months, so that by the time the foot is fully over-corrected the patient may be able to walk upon it, thus consolidating the

foot in the new position. It is sometimes necessary, however, for the peace of mind of the parents, to apply correcting plasters for short periods earlier in the infant's life, but such apparatus should never be left on more than a week or two in order not to interfere unduly with the growth of the leg at this actively growing period.

SOME UNSETTLED POINTS IN THE SURGERY OF THE THYROID GLAND*.

MAX BALLIN, M.D.,
DETROIT, MICHIGAN.

The surgery of the thyroid gland, in the last ten years has become a fairly settled chapter. The mere presence of a simple goiter is an indication for its removal as we know that nearly all of them grow and will sooner or later cause pressure and toxic symptoms, also the possibility of malignant degeneration in later years has to be thought of. (We saw in 200 cases three times malignancy follow in pre-existing goiter.) Thanks to the greatly improved technique, the mortality rate of operations for simple goiter has become such a low one that we do not abstain any more from removing goiters even if at the time they do not cause any other symptom than disfigurement. Our last two hundred goiter cases show a mortality of 1½ per cent. Three cases died; one an advanced case of Graves' Disease, after resection; one a malignant goiter and one from collapse of trachea after removal of a large retrosternal goiter.

The operation for goiter which ten or fifteen years ago was only done by a few exceptional men, has become the common property of every surgeon's household. Still there are a few questions in this large topic of the thyroid gland which remain unsettled, or at least are answered not equally by different surgeons.

Such are:

1st. The question what to do with large multi-adenomatous goiters where several more or less large cyst adenomas are present in both lobes of the gland. (Sketch I) or where the whole gland is permeated by many small colloid cysts forming a goiter that looks more of a general parenchymatous enlargement of the gland.

2nd. The second unsettled question is still more important; namely, what to do or how to treat surgically, the many serious cases of exophthalmic goiter who can not have a classical thyroidectomy.

These two questions I have chosen as the topic for our consideration.

The first question, how to operate on thyroid glands where most of the gland is taken in by several large or many small cyst adenomas or tumors of the mixed variety. For these cases it has to be remembered that a total thyroidectomy can not be done on account of the danger of myxedema following. The rule is to leave two-thirds, or after others, three-fifths of the gland. If we would simply follow this rule and for instance, remove one lobe, isthmus and a

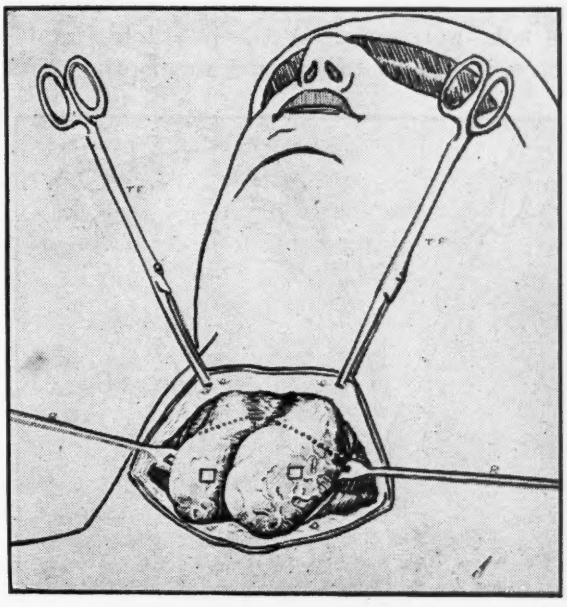

Fig. 1. A large adenoma takes in either lobe of the gland, leaving the upper poles free of tumors. Lines of resections of gland.

part of the other lobe, we would usually leave a thyroid rest, with small or large cysts. Such cystic remnants will in the first place, look badly; the patient will not be satisfied. Then such cysts, grow, by no means infrequently, especially in the line where the gland was resected, to large tumors, requiring another operation. We have had such secondary operations for new cysts, or better, enlargement of small cyst left in the primary operation, about ten times. To overcome this difficulty, two methods must be borne in mind: first, a method which in this country was made known by a publication from the Mayo Clinic, which is so-called cone-shaped, or plastik resection of the gland.

It consists briefly, of first freeing the isthmus from the trachea, separating the two lobes at the middle of the isthmus and then taking out from each lobe a cone-shaped piece. It seems

*Read at the meeting of the Michigan State Medical Society at Battle Creek, May 14th, 1918.

tc us that the separating of and cutting through the isthmus is often superfluous and complicates the method unnecessarily. The isthmus itself is very seldom enlarged; usually it is the enlargement of the lateral lobes which extends into the isthmus. By taking out cone-shaped pieces from each of the lobes and prolonging the incision into the isthmus, we can get the same result without tunneling between trachea and isthmus and cutting through the latter. This cone-shaped excision leaves symmetrical remnants of the lobes and therefore gives a good cosmetic result. The operation is relatively easy and from many cases where we have done it, I can assure you that the hemorrhage is not worrisome. A deep stitch running through the gland tissue and an adapting stitch

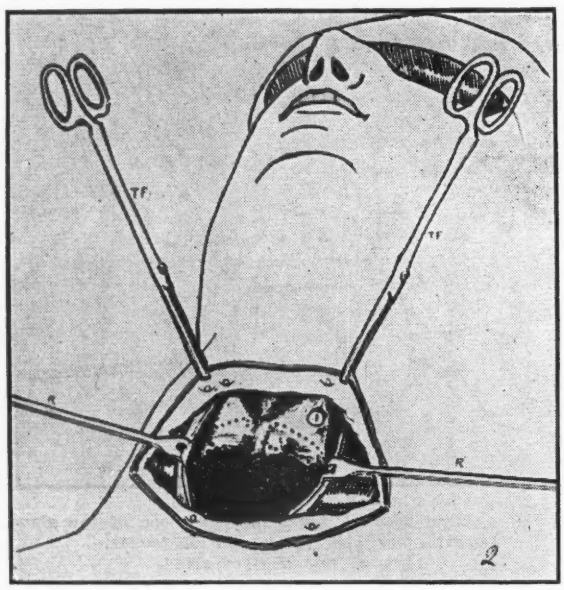

Fig. 2. The two gland-rests on the upper poles after removing the tumor bearing parts.

bringing capsule layer together will control the hemorrhage well.

A second method for handling these diffuse goiters is founded on the observation that the upper poles of the thyroid lobes where the large superior vessels enter, are usually free from cysts, adenomas and colloid cysts; therefore, we have often tried to save the good glandular tissue on one or both upper poles while removing all the other cyst bearing parts of the gland. It must be borne in mind that adenomatous mixed tumors and cysts interfere with the function of the little surrounding gland tissue and that surrounding gland tissue may contain small cysts as we saw, a source for new tumor formation. Therefore, it is better to remove all the cyst bearing gland tissue and leave only the well blood supplied healthy tissue around one or both upper poles. (Sketch I.)

If the gland rest is large enough to cause deformity, it is at times possible to suture it in the place of the removed goiter by one or two catgut sutures to some capsule rest close

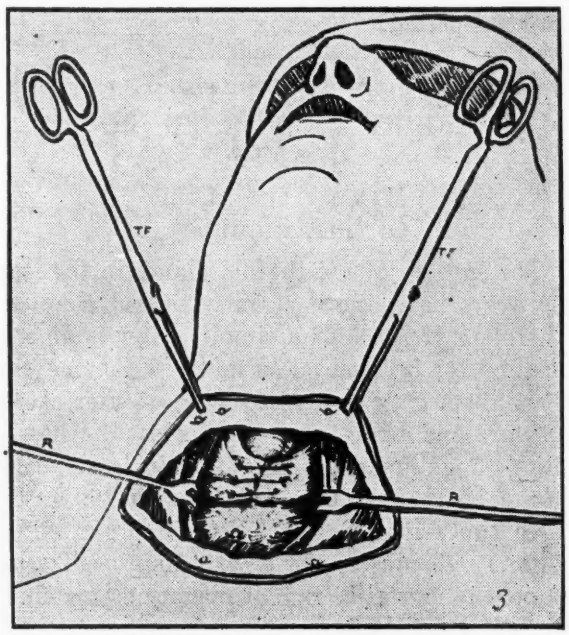

Fig. 3. Gland-rests on upper poles united loosely in midline in front of trachea.

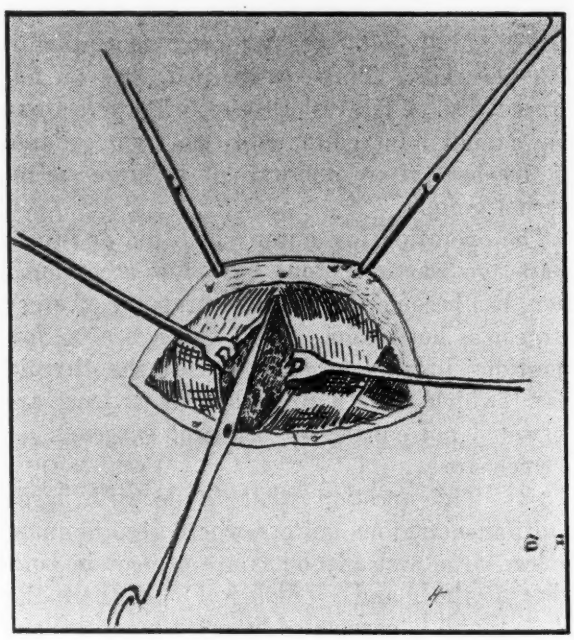

Fig. 4. After turning up skin-platysma flag and ligating the large fascia-veins, the straight muscles of the neck (Sterno-hyoid and Sterno-thyreoid) are divided in midline (Linea alba of neck).

to the trachea. Sometimes, when we leave two rests of thyroid on each upper pole, the two can be brought together by a few sutures in front of the trachea. (Sketches 2 and 3.) In

this way we are able to get good cosmetic results.

We have never had myxedema follow any one of these procedures. It seems that these patients, by the long-standing existence of goiter, have become accustomed to getting along

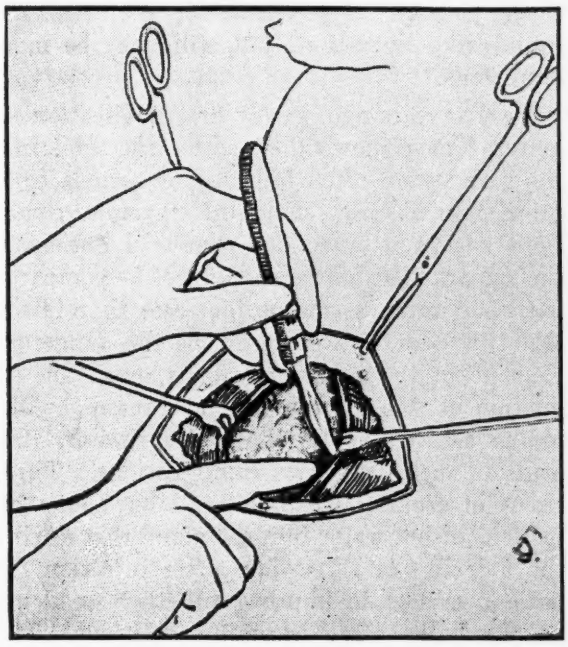

Fig. 5. Straight muscles are separated from the gland.

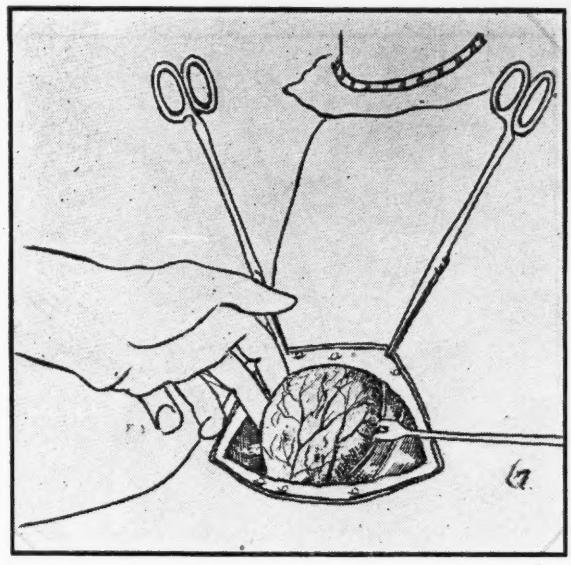

Fig. 6. Gland exposed. Muscles drawn to both sides without cutting them.

with very little functionating thyroid tissue. It seems our idea of leaving two-thirds or two-fifths of the gland needs some revision, at least in the type of cases mentioned.

We come to the second part of our consideration, which is the more important question—what to do with severe cases of hyperthyroidism.

Since it was recognized that Graves' Disease is due to an increased function of thyroid gland, operations have been done to decrease this function. This was accomplished in different ways: first by cutting away part of the gland—that is either thyroidectomy or resection of the gland. Second, by diminishing the blood supply of the gland—that is through ligature of one or more thyroid arteries or pole ligature. Third, by destroying some of the gland tissue by X-rays, Radium or hot water injections.

There can be no doubt that a partial excision of the gland is the most efficient method of accomplishing this object. On the other hand, the objection to this mtehod is its great

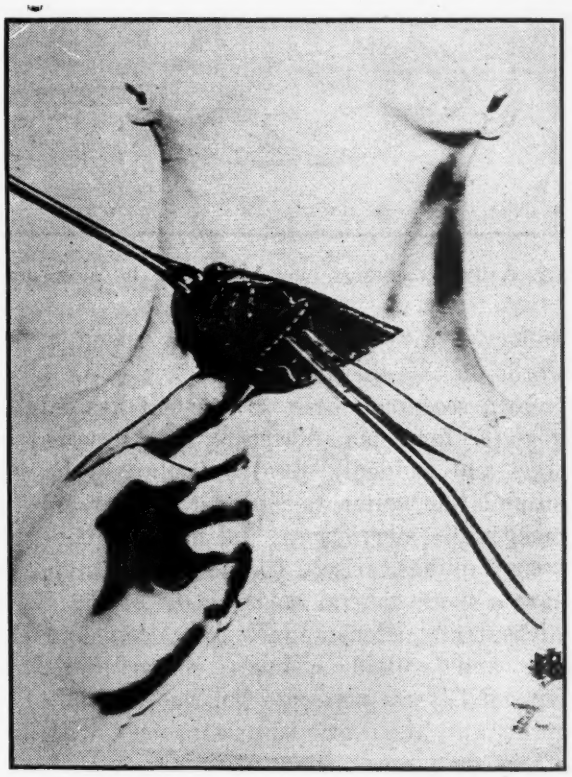

Fig. 7. Three interrupted catgut sutures transfixing the gland. Fourth one just transfixes gland. Index of left hand protects the needle from piercing gland posteriorly.

risk to the patient, who, with high pulse rate, exaggerated nervous symptoms and beginning myocarditis, can not stand much surgical handling. After these operations,, all symptoms present before are exaggerated for a few days. We have to reckon with this so-called post-operative thyroidism and it is at this period about the first three days after the operation —that patients succumb. The mortality rate in severe cases of Graves' Disease is still high, ranging by different men from 3 to 8 per cent.

I wish to say right here, that in nearly all cases of secondary Graves' Disease, or toxic goiters as others call it, that is, cases where

symptoms of thyroidism supervene in pre-existing adenomatous goiter, the removal of the goiter should be the method of choice. For this very reason, it is in my opinion, very wise to make this distinction between primary and sec-

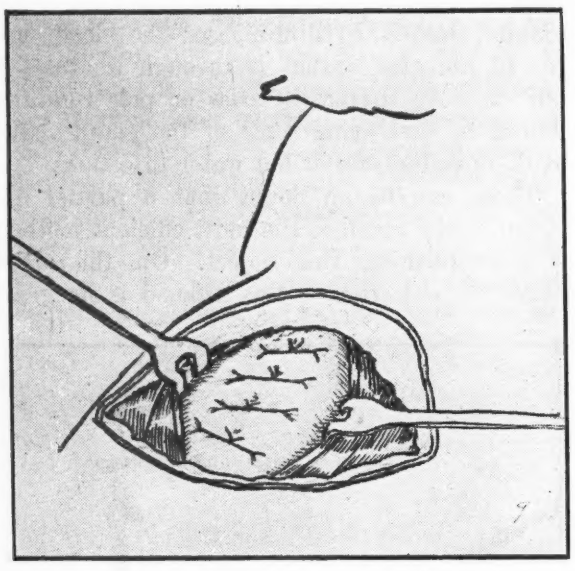

Fig. 8. Four transfixing sutures not tied to show depth of stitches.

ondary Graves' Disease. I may spend a few words on this distinction.

In a secondary case, the patient has carried a goiter for some shorter or longer period of time and suddenly, due to irritative changes around the goiter, symptoms of thyroidism, tachycardia, nervousness and not so frequently eye symptoms, arise. In the primary type we have a more general enlargement of the gland without any adenomatous formation and the cell and colloid changes characteristic of Graves' Disease permeate the whole gland. The goiter appears nearly simultaneously with the other symptoms. The secondary type, even with a pulse rate of 140, will always stand a radical operation, that is removal of the goiter. No so the primary type—which, when well developed, will not stand undue surgical handling. If the primary type has a pulse rate over 140, great restlessness and disturbances of metabolism, the excisions of the gland carry with them the great danger of succumbing to post-operative thyroidism. To overcome this danger, lesser operations, ligature of arteries, poles of the gland and hot water injections have been recommended. The pole ligature or ligatures of one or two arteries is always only a small step toward the cure. The patient's condition improves somewhat after the operation but relapses of the thyroidism will always follow. The same can be said about injections of hot water, and to me personally, it seems that the fatality in serious cases of thyroidism where this method was employed, is very high. It is not the innocent and undangerous method that it apeared to be, after its first recommendation; a hypodermic syringe filled with anything always appeals to a multitude of physicians and to the patient. Hypodermic injection does not sound like operation, but still may be more dangerous.

Twelve years ago, in my first publication on goiter, I have shown that iodine injections into the gland were often followed by serious complications: abscess, sloughing, pyemic conditions and even by sudden death. I anticipate the remark that iodine should not be compared with hot water, as iodine increases thyroidism. But this does not seem to be the dangerous element in the injection. It is more the reduction of the thyroid tissue caused by the iodine as well as by the boiling water, that leads to such dangerous complications. Three times in consultative practice, I have seen injections of hot water into the gland that during the first two or three days after injection the patient seemed to improve and then suddenly go to death, after becoming delirious. The delirium after hot water injection, seemed to be more pronounced than the heart symptoms.

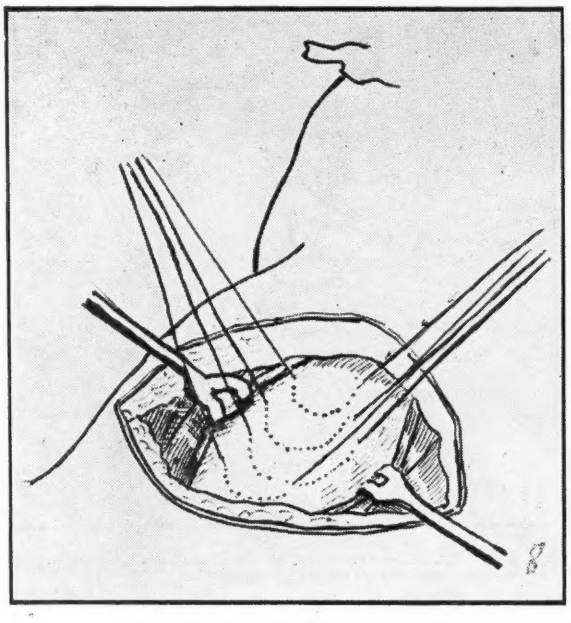

Fig. 9. Transfixing ligatures tied.

I further believe that hot water should never be injected in cases of thyroidism with adenomatous changes in the gland, because the secondary cases as told will all stand a radical operation. If you look through the records of

hot water injections, Dr. Miles Porter has injected a good many of the secondary type. These cases recover easily from radical operations and do not need injection methods. For serious cases of primary Graves' Disease we have practiced a method which we have termed "Transfixion of the gland" and it consists of several ligatures transfixing the gland, in detail:

We expose the gland by a small transverse collar incision separating the straight muscles of the neck—for the last few years we have not cut them. (Sketches 4, 5 and 6.) After the gland had been exposed, a No. 2 chronic catgut stitch is run through the gland continuously or interrupted in such a way that only the gland tissue proper is pierced, without infringing on its posterior extra-capsular part of the gland where the interior thyroid enters the laryngeal nerve and parathyroids are located. (Sketches 7, 8 and 9.) The idea is that along this chromic catgut, the secreting glandular tissue is replaced by connective scar tissue and herewith the secretive part of the gland is diminished. In two cases of secondary operation after transfixion we excised pieces of the gland from the seat of the transfixing ligatures and could show scar tissue in place of glandular tissue. This method has proved successful in so many cases that we are not afraid to recommend it. The reducing influence of this transfixion on the secretion of the gland seems to be much greater than that of the ligature of one or two arteries, which is clear if you consider how well the thyroid gland is nourished by blood from two arteries; the inferiors from the subclavian system and the superiors from the carotic system—a supply that is only equaled by the supply of the brain.

We take pains in starting our suture close to the right or left upper pole like a pole ligature. Keeping the left index finger protecting posteriorially, (Sketch 7) we go through the gland taking in our stitches as large masses as possible and always including the accessory veins—under which names they are known since Kocher. In this way we also interfere with veinous circulation of the gland as recommended by Tucholske. This interrupted stitch can be carried through both lobes without the danger of getting myxedema as we get only fibrous streaks on the places of suture.

The method is so efficient, that in my oldest case done in 1909, a very pronounced one with every sign, exophthalmus, tremor, goiter, etc., I would challenge anyone to diagnose Graves' Disease to-day. Lately we have closed most of these wounds simply by letting the longitudinal muscles, sterno-thyroid and sterno-hyroid, fall together in the middle line, fastening them with two or three not too tight catgut sutures and then stitching the platysma, fascia and subcutaneous fat by a running catgut stitch and uniting the skin with slips or silk without any drainage.

From this method we have had very little post-operative thyroidism, often nearly invisible scars and in most cases very gratifying results.

In our last two hundred cases we have applied this method twenty-six times for primary Graves' Disease. This shows that we do not use it as a method of choice but only where the symptoms are such that the prognosis of major operations would be too grave. Of the twenty-six cases, none died. Several are cured completely or their improvement has come so close to a cure that no further operation is indicated. Only in one case, after a primary improvement, recurrence of all symptoms occurred and this patient is now nearly cured by a second transfixation.

I do not claim a complete cure of all symptoms of Graves' Disease by this method. This has been accomplished only in a minority of cases—but I claim that the improvement after this method is such that the patient is satisfied and does not wish for any better condition. The gain in weight is very marked; the pulse rate becomes slow, the troublesome palpitation of the heart ceases and the nervousness disappears. Only the eye symptoms are usually but partially influenced.

If we compare this method with the large mortality rate from resection in serious cases of Graves' Disease, not too much can be told in its favor. By this method, in the last four years, we have kept down our mortality rate to a remarkable degree. In fact, my only fatal case of Graves' Disease was in a man whose gland was resected. The gland presented itself so nicely in the wound that it was seducing to do a partial thyroidectomy in spite of the serious symptoms of the patient warning against such procedure.

We also feel from our results, that this method is less dangerous than the injection of hot water and not more dangerous than a pole ligature, but is much more efficient than any of these methods.

355 Woodward Avenue.

DISEASES OF THE AORTA—AN ANALYSIS OF FIFTY-FOUR CASES.*

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ADDENDA—EXPLANATORY OF CERTAIN PHENOMENA.

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In an analysis of 456 cases of cardiovascular disease, which have been under our observation largely in the last four years, there were seven cases in which aortic stenosis was considered a justifiable diagnosis, twenty-two cases of aortic regurgitation, nineteen cases of aortitis and six cases of aortic aneurysm, a total of fifty-four cases or about 12 per cent. When we consider that many of the cases under consideration did not exhibit a marked pathology, such cases as sinus arrhythmia and premature systoles being included in the group, this is fairly high percentage. Greiwe, in a study of the records of the necropsies in the Cincinnati Hospital from 1900 to 1903 found that of 854 patients 160 had well defined heart lesions. The following were the divisions of the heart cases: aortic lesions forty-three; mitral lesions, forty-three; combined aortic and mitral lesions, thirty-eight; pericarditis, sixteen. When we consider facts like these and our survey of the literature shows the great preponderance of articles on mitral disease it is evident that the attention of the medical profession has not been sufficiently directed to the consideration of the possibility of the presence of aortic disease. The symptomatology is admittedly obscure in many cases, but we are confident that the chief difficulty resides in the mental attitude of the examiner. That is, they must be looked for to be found. Allbutt quotes Barie, who says of aortitis "elle pousse souvent inapercue . . . elle demande a etre cherchee." From a study of these cases we would conclude that although when a person becomes affected with syphilis he is extremely likely to develop aortic disease, on the other hand, aortic disease should not be ruled out because of the fact that syphilis has never been a factor in the past history of the patient. Competent authorities, not only from careful clinical studies, but also from the consideration of necropsy records, give as etiological factors, small-pox, scarlet fever, streptococcus infection, diphtheria, typhoid fever, influenza, pneumonia, malaria, tuberculosis and gonorrhea.

*Read before the Wayne County Medical Society, January 14, 1918.

AORTIC STENOSIS.

The normal opening of the aortic valve is 7 cm. In the milder grades there is adhesion between the segements of the aortic valve which

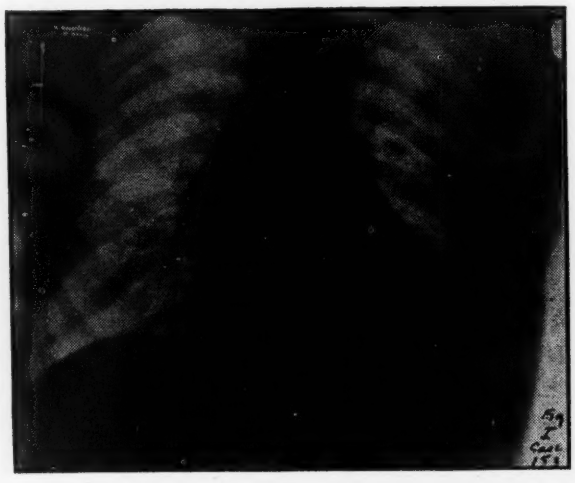
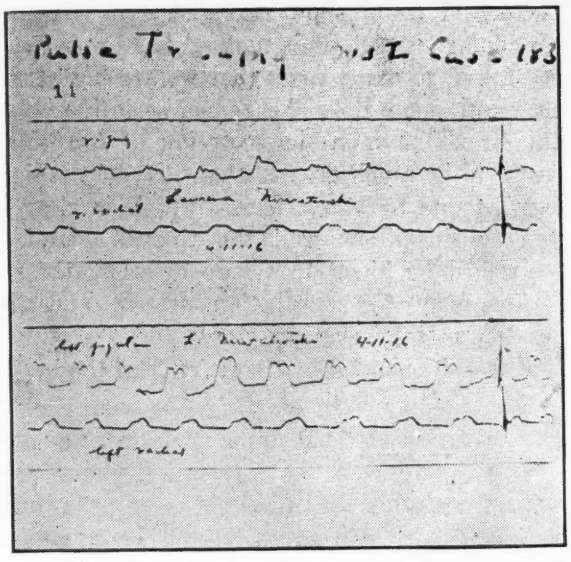


Figure No. 1. Shows thickening of first part of the aorta in a case of aortic stenosis. (Case No. 183).

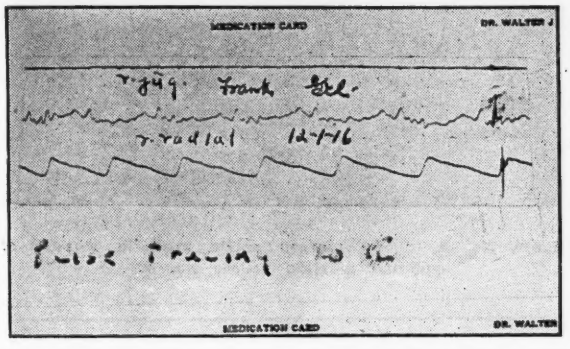


Pulse Tracing No. 1. Shows plateau pulse in both right and left radial in a case of aortic stenosis. (Case No. 183).

are so stiffened that during systole they can not be pressed back against the aortic wall. The valves are usually thickened but they may be thin. In the later stages calcareous degeneration often takes place. A relative stenosis may occur, when with normally aortic valves and ring, there is a dilatation of the aortic beyond. Aortic stenosis may be congenital, may result from changes associated with arteriosclerosis,

(the senila type) but the usual cause is streptococcus infection. In none of the seven cases which we have observed, is syphilis a proved factor. Blood Wassermans were negative in two cases. In one case there was a history of double peritonsillar abscess, in one case there was a history of injury to the heart region as the result of a fall, in another case there were frequent attacks of tonsillitis, while in two cases arteriosclerotic changes were considered to be the cause. There were six males and one female, their ages ranges from 27 to 68 years of age, the average being 38 years. The blood

Figure No. 2. Shows thickening of the first part of the aorta not causing aortic stenosis. (Case No. 83).



Pulse Tracing No. 2. Shows a normal radial pulse in the presence of a marked systolic thrill in the aortic area accompanied by systolic murmur. (Case No. 83).

pressure was usually low, in only one case being at all high, and evidently being associated with changes in the kidneys, when it was 160 systolic, diastolic 130. The lowest systolic pressure was 100, diastolic 60. The average systolic blood pressure 115, the average diastolic was 88. Premature beats were present in two cases, in one appearing when the patient arose to a sitting position from a recumbent one. The diagnosis was made on the following symptoms: A systolic thrill, palpable in the aortic area, systolic murmur, audible in the aortic area, a diastolic murmur, replacing the aortic second or an absent second with a plateau pulse, which must be bilateral. A plateau pulse may be observed in one radial in aortic aneurysm, while on the other side the pulse will be normal. The ventricle shows enlargement, the apex usually being in the sixth space. It is in this disease that hypertrophy without dilatation is especially likely to take place. Shortness of breath on exertion was a common complaint. In three of the patients anginal symptoms occurred. Syncope of short duration occurred in one patient, while in another patient after exertion, an attack of unconsciousness lasting from five to thirty minutes supervened. In one patient the precordial pain which occurred at the beginning of exercise, ceased if the exercise was persisted in. The treatment consisted in putting the patient's exercise on a plane where circulatory disorders did not appear. Digitalis was a helpful factor in most of the cases.

Table I.

Figure 1 and pulse tracing 1, should appear in body of text on aortic stensosis. Also Figures 2 and pulse tracing 2.

TABLE NO. 1.

AORTIC STENOSIS.

Case No.	Sex	Age	Pulse	S.B.P.	D.B.P.	Arrhythmia	Oedema
6	Male	27	98	100	80	None	None
11	Male	41	92	106	80	1. arm None	Slight in
				102	72	r. arm	ankles.
138	Female	68	78	160	130	2 pre. beats in 30 seconds	None
183	Male	40	80	118	60	Premature beats on sitting up.	None
373	Male	34	64-120	105	Not obt.	None	Present in feet. Moist rales at lung bases.
456	Male	59	70	118	108	None	Slight of legs.
499	Male	49	78	115	90	None	None

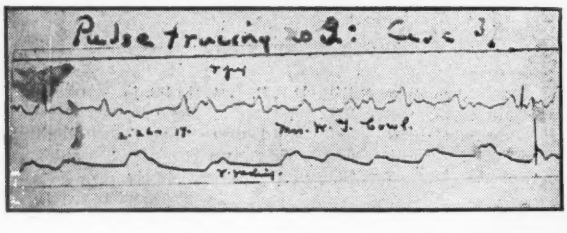
Dr. Walter J. Wilson, Jr.

AORTIC REGURGITATION.

In the consideration of the twenty-one cases of aortic regurgitation, there were nine cases which were clearly specific, and twelve in the non-specific. In the non-specific group, blood Wassermans were negative in two cases, while in the other cases a clear history of infectious arthritis occurred. In these cases there may also have been some luetic infection but there was no clear indication thereof. In the non-specific group there were eight males and four females. The youngest patient was a male aged 16, the oldest a male aged 44, the average age being 28 plus. In the specific cases there were nine males. The youngest one 27 years, the oldest one 52 years of age, the average age being 42. Wassermans were positive in the five

cases in which it was done. The diagnosis was made upon the following symptoms: Diastolic murmur, jumping arteries, Corrigan pulse, a capillary pulse and a pistol shot femoral or brachial. The brachial gives the pistol shot phenomenon as well as the femoral and on account of its accessibility is the point of choice

Figure No. 3. Illustrates a case of aortic regurgitation non-specific type. (Case No. 37).



Pulse Tracing No. 3. From same patient as figure No. 2, shows auricular fibrillation, also tendency to aortic stenosis. (Case No. 37).

for eliciting this sign. The blood pressure in the non-specific cases ranged from 120 systolic to 215 systolic. The diastolic blood pressure, using the auscultatory method ranged from zero, in those cases in which there was no demarcation from a phase in which the sharp sound changed to a weak one, to 100 which occurred in a case in which the systolic blood pressure was 200. The pulse pressure ranged from 40 to 150. In two of the non-specific cases the diastolic murmur developed while the patient was under observation, both having at the time of the first examination, marked mitral regurgitant murmurs. In regard to the blood pressure, a curious phenomenon occurrs when on taking it in the lower extremities, it is found to be higher than in the upper extremities. W. F. Koch, Prof. of Physiology, Detroit College of Medicine and Surgery, has devised an ingenious apparatus which demonstrates mechanically his explanation, which is that it is on the principle of suction. (See explanation.) The treatment in the non-specific cases has proceeded on general lines. In case of pulmonary oedema occurring in this group, caffeine has given the most beneficial results. In one case in which a marked oedema developed in the lower extremities, almost magical results followed the administration of theobromin sodium salicylate. Digitalis has been used in both types of cases, with only moderate results, while it seemed to have no deleterious affects. The pulse rate in a number of the cases was accelerated. This probably results from an implication of that part of the aorta from which normally stimuli arise which stimulate the vagus reflexly. This is also Koch's explanation (see explanation) and obtained for those cases also of aortitis in which the pulse rate is accelerated. In the specific cases, neosalvarsan was used in doses of .15 gm. intravenously, but without particularly happy results in many of the cases.

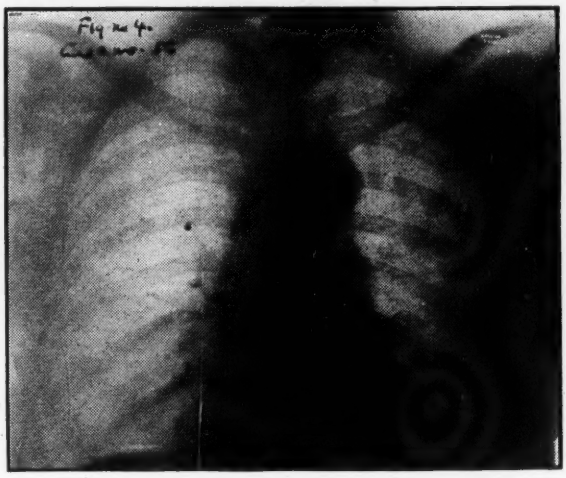
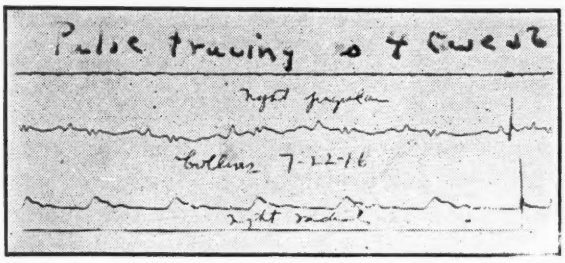


Figure No. 4. Shows marked aortic knob in a case of syphilitic aortitis. (Case No. 56).



Pulse Tracing No. 4. Showing perfectly regular pulse with syphilitic aortitis. (Case No. 56).

AORTIC REGURGITATION.

In aortic regurgitation of the specific type, premature beats occasionally were observed in two cases, in one of whom the beats were interpolated, while in the third case there were

short series of two or three beats. In the non-specific cases auricular fibrillation occurred in three, while premature beats occurred in two others, one occasional and the other every alternate beat.

Tables II. and III.

Figure 3 and pulse tracing 3 should be shown in text of non-specific class.

TABLE NO. 2.

AORTIC REGURGITATION.

Specific.

Case No.	Sex	Age	Pulse	S.B.P.	D.B.P.	Arrhythmia	Oedema
23	Male	37	76	182	60	None	None
29	Male	51	68	160	50	Pre. beats	Present. Some dullness at lung bases.
54	Male	48	84	150	50	None	None
64	Male	47	110	165	90	None	None
86	Male	40	94	140	55	None	None Moist rales in left lower base.
94	Male	34	72	175	110	None	Present
198	Male	38	72	145	60	Interpolated systoles	None
213	Male	52	78	140	60	Pre. beats in series.	Present
296	Male	27	102	138	45	None	Present
363	Male	36	106	115	65	None	Marked

Dr. Walter J. Wilson, Jr.

TABLE NO. 3.

AORTIC REGURGITATION.

Non-Specific.

Case No.	Sex	Age	Pulse	S.B.P.	D.B.P.	Arrhythmia	Oedema
22	Male	32	72	200	100	None	None
37	Female	27	84	130	60	Auricular Fibrillation	None
141	Female	20	88	142	45	None	None
205	Male	38	76	120	80	None	None
265	Male	34	114	174	70	Auricular Fibrillation	Passive congestion of liver.
293	Male	31	110	152	70	Pre. beats every alternate beat on occasions, in others in series.	Marked
342	Female	43	114	215	65	None	Present
331	Male	18	116	130	No dia. phase.	None	Present in feet.
395	Male	19	96	120	No dia. phase.	None	None
433	Male	16	126	136	40	None	None
441	Male	44	140	144	84	Auricular Fibrillation	Present
		(Sept. 29th, 1917.)	70	125	65	Pre. beats	
		(Oct. 3rd, 1917.)	84	160	80		
		(Oct. 21st, 1917.)	84	160	70		
		(Oct. 23rd, 1917.)					
502	Female	21	82	160	No dia.	None	None

Dr. Walter J. Wilson, Jr.

AORTITIS.

The discussion of aortitis is comparatively recent, the best description being given by Clifford Allbutt in his book on Diseases of the Arteries. In our series of cases there were nine specific and ten non-specific. In the specific group the youngest patient was 33, the oldest 50. There were eight males and one female. In six of the cases blood Wassermans were positive, while in the other the clinical findings were absolute. The diagnosis in these cases devolved upon finding an increase in the borders in the second space, the normal limits not exceeding six cm. In five cases there was a systolic murmur audible in the aortic area, while the aortic second was clear. In one case there was a diastolic murmur and the aortic second was not audible. In three cases there were no audible murmurs. In one case only was the pulse rate over 100. Arrhythmia was present in but one case, and was of the sinus arrhythmia type. In the specific cases the chief complaint was a shortness of breath, while in one there was marked angina which did not respond to treatment with morphine in heavy doses. In

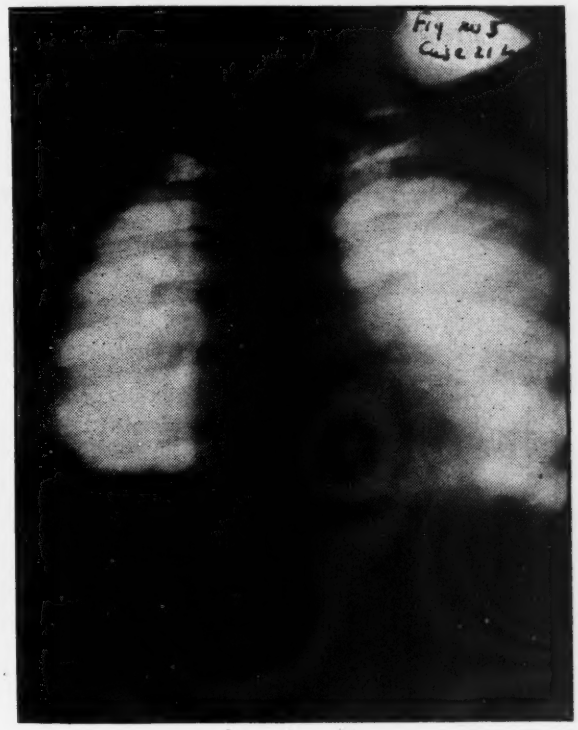
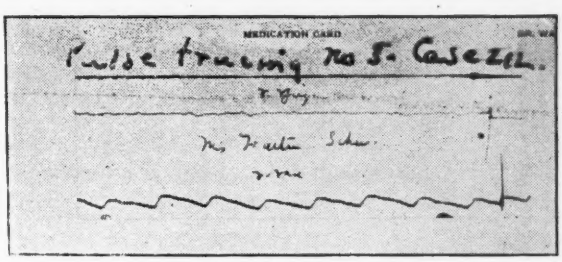


Figure No. 5. Shows enlargement in the aortic area. Under fluoroscopic examination this was shown to be due to hyper-elasticity of the aorta and not to aneurysm. (Case No. 212).



Pulse Tracing No. 5. Shows a regular pulse in a case of non-specific aortitis. (Case No. 212).

the non-specific precordial pain was present in six cases, and was usually persistent. Shortness of breath on exertion was marked in two cases. In this type premature beats occurred in two cases. As to treatment in the luetic cases, neosalvarsan was used in small doses but was not especially helpful. In one case, a colored male, Wasserman positive, the blood pressure being 170 systolic, diastolic 110, the urine sp. gr. 1014 alkaline, albumin XX, coarse granular casts, mixed treatment was used. Within three months the systolic fell to 135, diastolic 85, and the pulse rate dropped from 92 to 82, and the patient's dizzy spells ceased. In passing we

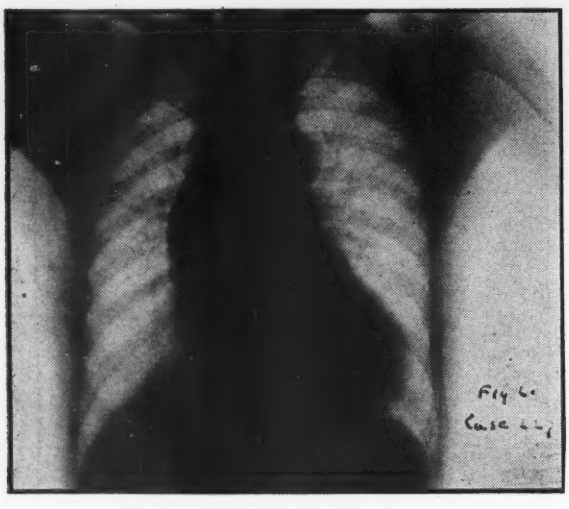
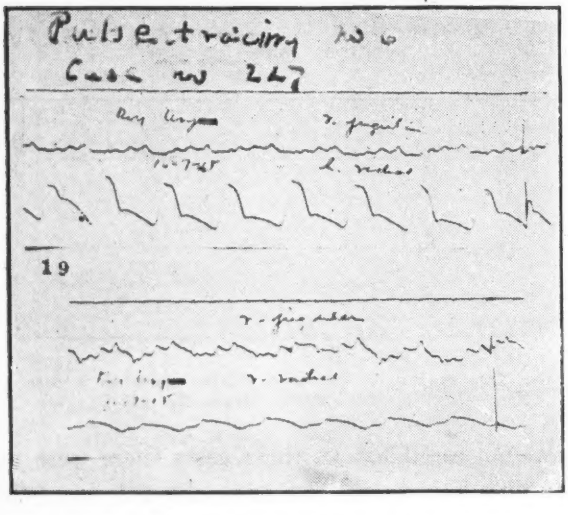


Figure No. 6. Shows aneurysm of the ascending aorta. (Case No. 227).



Pulse Tracing No. 6. Shows difference in the radials in a case of aortic aneurysm. (Case No. 227).

may say that in the specific cases the systolic blood pressure varies from 128 to 215, the average being 156. Diastolic varied from 80 to 110, the average being 95. In the non-specific cases the average systolic blood pressure was 142, the extreme limits being from 105 to 192. The average diastolic blood pressure was 91, the limits being 65 to 125.

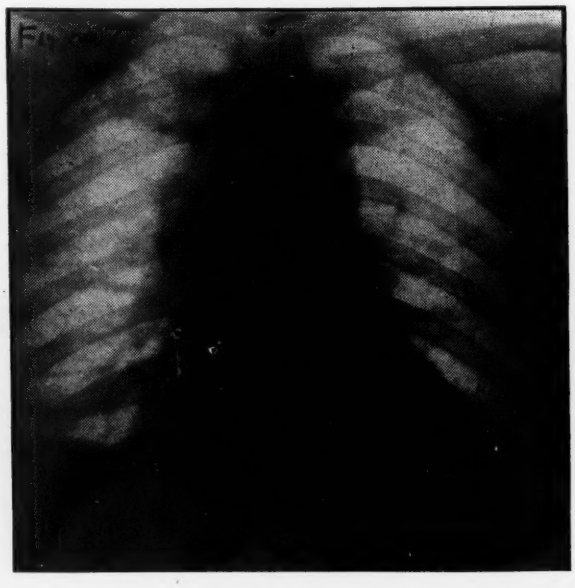
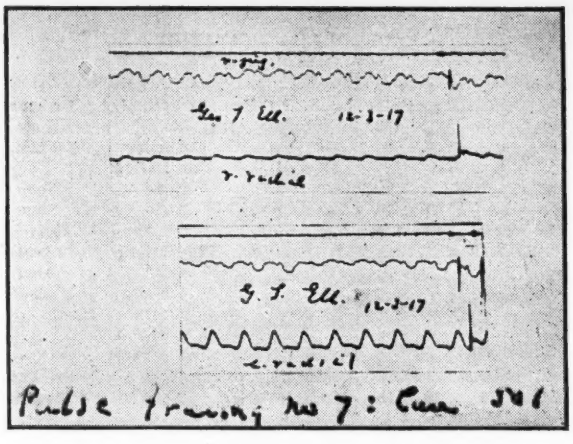


Figure No. 7. Showing aortic aneurysm. (Case No. 501).



Pulse Tracing No. 7. Shows difference in radials in a case of aortic aneurysm. (Case No. 501).

Tables IV. and V.

Figure 4 and pulse tracing 4 should appear in body of text on Aortitis, also Figure 5 and pulse tracing 5.

TABLE NO. 4.

AORTITIS.

Specific.

Case No.	Sex	Age	Pulse	S.B.P.	D.B.P.	Arrhythmia	Oedema
194	Male	43	64	142	100	None	None
226	Male	35	92	170	110	None	None
229	Male	36	58	135	85	Sinus type	None
465	Male	44		140	85	None	None
38	Male	50	106	215	100	None	None
56	Male	33	78	128	80	None	None
80	Female	45	70	152	110	None	None
84	Male	48	76	150	80	None	None
94	Male	34	72	175	110	None	None

TABLE NO. 5.

AORTITIS.

Non-Specific.

Case No.	Sex	Age	Pulse	S.B.P.	D.B.P.	Arrhythmia	Oedema
58	Female	30	86	150	100	None	None
66	Male	21	110	152	100	None	None
83	Male	27	72	106	65	None	None
150	Male	27	74	142	70	None	None
160	Male	56	60-65	135-160	80-90	None	Slight
212	Female	22	76	125	75	None	None
275	Female	30	74	105	75	None	None
426	Male	54	63	154	100	Occasional premature auricular beat.	None
476	Female	47	74	192	125	None	Present in legs.
97	Male	51	96	155	115	Few premature beats.	None

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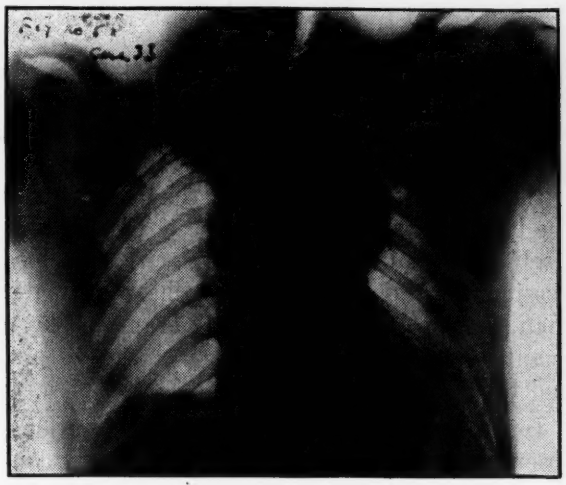
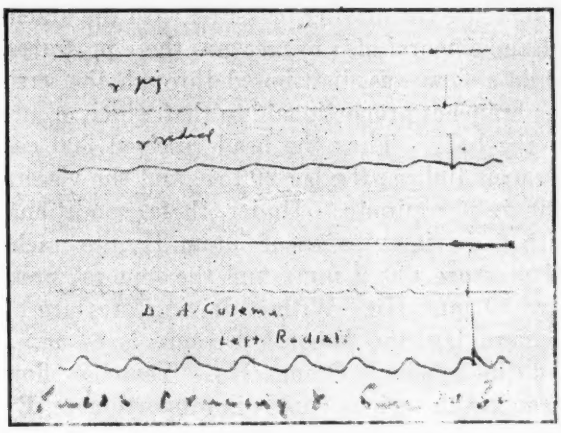


Figure No. 8. Shows extensive aneurysm of the aortic arch. (Case No. 33).



Pulse Tracing No. 8. Shows difference in radials in a case of aortic aneurysm. (Case No. 33).

AORTIC ANEURYSM.

The six cases of aortic aneurysm were all in males. The age limits were from 30 to 51, the average age being 41 years. Blood Wassermans were positive in all the cases. The pulse rate varied from 76 to 122, the latter patient coming on account of the tachycardia. The average pulse rate was 94. The blood pressure ran from zero in one case, in which no right radial pulse was palpable, to a systolic of 180 in another case. Except in a case in which the systolic blood pressure was 110, there was a divergence of the blood pressure in the right and left arm. In case No. 106 for instance, the blood pressure in the right arm was systolic 82, while in the left arm it was 150. There was usually a slight variation in the diastaolic blood pressure. Arrhythmia was present in none of the cases, nor was oedema. The diagnosis was made either on the presence of a pulsating mass which could be palpated above the sternum, or marked dulness in the first and second spaces on percussion. In all of the cases there was a marked difference between the two radial pulses. Aortic regurgitation was present on the first examination in two cases, in one case it developed while the patient was under observation. Aortic second was clear in the others. From the time of the first infection until examination and discovery of the lesion, was in three cases, fifteen years. In one case the previous venereal history showed gonorrhea in 1913, the lesion being discovered in 1915. In one case seven years ensued, while in the other case gonorrhea occurred in 1909, syphilis was diagnosticated in 1913 and aneurysm was found in 1917. In three cases tracheal tug was present, and in one voice changes were apparent. Skiagraphy gave us clear findings in all of the cases. Two cases are dead, two have passed from observation and two are known to be living. Salvarsan seemed to be beneficial in one of the cases. In one of the cases who had presented spinal symptoms in 1913 and had received most vigorous treatment intraspinally and intravenously with salvarsan, despite this fact aneurysm developed four years later. Mercury and the iodides were also used in all the cases.

Table VI.

Figure 6, Pulse tracing 6.
Figure 7, Pulse tracing 7.
Figure 8, Pulse tracing 8.

Should appear in body of text on Aortic Aneurysm.

TABLE NO. 6.

AORTIC ANEURYSM.

Case No.	Sex	Age	Pulse	S.B.P.	D.B.P.	Arrhythmia	Oedema
33	Male	34	84	102	70 r. arm	None	None
				95	80 l. arm		
106	Male	50	106	82	68 r. arm	None	None
				150	80 l. arm		
227	Male	30	83	180	160 r. arm	None	None
				168	118 l. arm		
431	Male	47	96	110	not obt. r. arm	None	None
				110	90 l. arm		
501	Male	35	122	145	90 r. arm	None	None

Dr. Walter J. Wilson, Jr.

CONCLUSIONS.

From a study of these cases we believe that the aorta deserves a great deal more attention from clinicians than it has heretofore received, and that while the importance of syphilis as a causative factor should not be minimized, that other types of infection are very frequently present, a fact which so far has evidently escaped the attention of the majority of medical practitioners.

BRACHIAL AND FEMORAL PRESSURES IN AORTIC INSUFFICIENCY.

W. F. KOCH, Ph.D.

The marked difference in femoral and brachial blood pressures of aortic insufficiency has, so far as I know, evaded explanation. Yet as will be seen from the following discussion, it is dependent upon very simple physical facts, facts which indeed give this pressure difference a diagnostic and a prognostic value in other conditions, for example, surgical shock.

The circulation in aortic insufficiency differs greatly from the normal in the rates of systolic and diastolic blood flow, and likewise in the difference between systolic and diastolic pressures. The onward diastolic flow in the vessels is either greatly reduced or may even be nil. It is generally recognized that there is in diastole a back flow from the aorta into the heart, and it has been proven that there is a back flow from the capillaries into the arteries. Now since a back flow from the capillaries to arteries exists in the latter part of diastole, we may conclude that the elastic diastolic recoil of the arteries which normally tends to equalize the systolic and diastolic pressures and continue the onward flow of blood in diastole, is expended in aortic insufficiency before the end of diastole is reached, and therefor at this period the onward flow comes to a standstill. The systolic flow must therefor be greatly increased to compensate for this pause, in order to maintain a sufficient blood supply to the tissues. Of course the systolic and diastolic pressures are proportional, and the extent of the changes depends upon the degree of the valvular insufficiency.

As will be seen from the following discussion, it is this increase in systolic rate of flow through the aortic arch that determines the difference in femoral and brachial pressures. When fluid flows from a large tube into its branches the quantity flowing through the branches and velocity pressures vary with the sizes and directions of the branches. Thus a tube with two branches of equal size which are directed from the main tube at equal angles will supply to each branch an equal flow under equal pressures. But when one branch is smaller, and proportionately as it is directed away from the direction of the flow through the main tube, the flow and pressure in the small branch becomes less, and indeed may become negative. Moreover the drop in pressure in this branch increases as the mass velocity in the main tube. Now exactly this suction effect is developed at the openings of the upper aortic branches, the innominate, the subclavian, and carotid, etc.

The branches at the lower end of the aortic tree on the other hand are of equal sizes and given off at equal angles which deviate comparatively little from the direction of the aorta, hence here the suction component has very little chance to develop, and the pressures in the branches must approach the aortic pressure itself. Moreover the mass velocity of blood passing the upper aortic branches is greater than that passing the lower branches by a quantity equal to that supplied to the viscera, and this quantity is very large.

In order to test the foregoing considerations, observations were made upon an apparatus constructed to simulate as closely as possible the anatomical structures concerned. Mercury manometere were connected with the aortic arch to measure the driving pressure, with the brachial and femoral also to measure their pressures, while a flow was distributed through the various branches proportionate to that which occurs in the body. Thus the head received 300 cc., the arm 100 cc., the leg 200 cc. and the viscera 500 cc. per minute. Under these conditions, with a driving pressure of 50mm. Hg.the brachial pressure was 2 mm., and the femoral pressure 40 mm. Hg. With a driving pressure of 35 mm. Hg. the femoral pressure is 27 mm., and the brachial Omm. Hg. Yet the flow through the various vessels is proportionate. By increasing the driving pressure to 57 mm. the femoral pressure is raised to 45 mm. and the brachial pressure to 3 mm. Hg. Now the pressure in the branches of the tube may be resolved into two components, that tending to drive fluid into the branch, and that pressure tending, by virtue of the mass velocity flowing past the branch, to such fluid from the branch. And as was stated above, this suction pressure depended also upon the size and direction of the branch. The conditions are attained for a higher femoral than brachial pressure, if it can

be shown that by increasing the rate of flow through the aorta, the suction pressure at the upper aortic branches increases about as rapidly as that pressure which tends to drive blood into these branches, and that the suction pressure does not develop in the lower aortic branches as was claimed in the above discussion. The experiments referred to, prove these points exactly. Since on increasing the driving pressure from 35 mm. to 57 mm. Hg. the femoral rose from 27 to 45 mm. Hg. and the brachial from zero mm. to only 3 mm. Hg. Thus the femoral pressure increases about six times as fast as the brachial pressure, when the velocity pressure is increased in the aorta.

This increased velocity pressure occurs wherever there is a large pulse pressure, and the conditions determining it are, a moderate vasodilatation, large systolic cardiac output, stiff arteries and hypertension. The vasodilatation must not increase the capacity of the vascular system so much as to interfere with the return of the blood to the heart. A large systolic output occurs with a strong heart and with the moderate vasodilatation, or as a compensatory phenomenon. Where there is loss of elasticity of the vessel wall as in arteriosclerosis, and proportionately as the pressure in the vessel goes above 110 mm. Hg. (the point of maximum elasticity of the vessel wall) the lateral pressure in the vessel drops and the velocity pressure increases.

The diagnostic significance of a higher femoral than brachial pressure is therefore not specific and simply points to a more rapid systolic flow of blood, as may occur with a moderate vaso-dilatation, hypertension, arteriosclerosis or in cardiac compensation and in aortic insufficiency. It means that the heart is performing its work well under the circumstances.

HEART RATE IN SYPHILITIC AORTITIS.

The syphilitic lesion is characterized by an infiltration that shuts off the tissue nutrition through peri- and endarteritis. Thus the nerve endings in the tissue attacked are killed off and the area becomes anaesthetic. Now the arch of the aorta is supplied by the sensory Depressor nerve. Its endings are normally stimulated by the stretch put on the aortic wall by the pressure inside. When the aortic pressure rises above 130 mm. Hg. the depressor endings are considerably stimulated, and the vagus and the vaso-dilator centers in the medulla correspondingly stimulated by these depressor impulses. The result is a reflex inhibition of the heart rate and a general vaso-dilatation. Consequently a drop in blood pressure and slowing of the heart occurs. Now as a result of aortic degeneration these normal depressor impulses are not generated, the vagus center receiving fewer impulses becomes hypo-tonic and the heart rate speeds up. Likewise the high blood pressure in some vascular diseases must be related to lack of tonus of the vaso-dilator center resulting from aortic degeneration. Conversely for a short period in the earliest stages of aortic disease, while the depressor endings are being starved out, degenerative changes in them must excite them, the vagus tonus thus being increased and a slow heart rate results. I do not know whether such a slowing of the heart rate has been identified with early aortic disease. But if looked for it should be found, and prove to be as valuable a factor in early diagnosis as the increased heart rate is in late aortic disease.

DISCUSSION.

DR. A. W. CRANE of Kalamazoo in discussing the paper called particular attention to the electro cardiographic diagnosis of Specific Aortitis. Dr. Collins H. Johnston, Grand Rapids mentioned the fact that, aortic regurgitation could be practically diagnosed by the Corrigan pulse alone which could always be felt by simply laying the palm of the hand upon the dorsum of the patient's foot.

FIRST LIEUTENANT L. L. CRAVEN stationed at Camp Custer said that Aortic Regurgitation was quite common among men of draft age. He stated that a large percentage of the aortic disease cases among the negroes at Ft. Riley were specific. In the diagnosis was a marked difference in the Systolic and Diastolic Blood Pressure especially when nephritis was present.

DR. WILSON in closing said that a careful history should be taken and that one should not be afraid to examine thoroughly.

CYSTITIS.*

WALTER LENEHAN, M.D.,
BAY CITY, MICHIGAN.

Cystitis is a term loosely applied to all conditions occasioning pain in the region of the bladder. It has long been a convenient term to cover a multitude of sins. Acute prostatitis, acute seminal vesicutitis, and acute gonorrhoeal posterior urethritis are often called cystitis. None of these diseases is in itself cystitis. A true gonorrhoeal cystitis does not exist, but one would think so from the number of times we hear that diagnosis made.

By the term cystitis, we mean inflammation

*Read at the Gratiot-Isabella-Clare County Society meeting, November 15, by Walter Lenehan, M.D.

of the bladder tissue as a result of bacterial invasion. In such inflammation we must always have pus in the urine and occasionally blood. Bacteria gain entrance to the bladder wall by four different routes: the urethra, the kidneys, one of the different organs in close proximity to the bladder wall, and through the blood current. Bacteria in the bladder do not always produce cystitis. Such a condition is known as bacteriuria.

Idiopathic cystitis does not exist. It is true that the cause and source of bladder infections are often difficult to find, but, in every case of a true cystitis, we must have bacterial invasion with pyuria, for cystitis is always a secondary process.

In determining the cause of a supposed cystitis, we must distinguish between those diseases or conditions outside the bladder which cause symptoms similar to those of cystitis, but where the bladder is not in any way involved —a false cystitis; and those other diseases or conditions which are situated in or about the bladder which have caused a bacterial infection of its lining membrane, and result in a true cystitis. We may, of course, have several sources of a cystitis in one patient. For example, in tuberculosis, one or both kidneys, the seminal vesicles, prostate, and epididymis, may be involved at about the same time.

Etiology. We may divide the causes of cystitis into predisposing and exciting.

There are numerous conditions which may act as predisposing causes to cystitis, although they may exist indefinitely without actually causing inflammation. The one most frequently met is the retention of residual urine, occurring in cases of stricture and enlargement of the prostate, or resulting from the paralysis of the nerve supply to the bladder, depending upon a fractured spine or a myelitis. Retained urine of itself can not cause inflammation so long as the bladder remains free from micro-organisms; but stagnant urine affords an excellent culture medium for germs which may be introduced int othe bladder, and the retention, if long, continued, impairs the vitality of the mucous membrane by keeping it congested.

Exposure to cold may act in an indirect way by lowering the vitality of the tissues, so that germ infection may the more easily take place.

Calculus, prostatic enlargement and pregnancy may cause a chronic congestion of the mucous membrane without the presence of retained urine.

So long as the cells of the mucosa are intact, the normal bladder epithelium offers a barrier to the invasion of micro-organisms; but if the bladder walls are congested for some time the superficial cells are loosened and desquamated and the softer cells underneath are exposed, allowing the entrance of germs. The hyperaemia also causes the small blood vessels to rupture, on account of the increased vascular pressure.

The exciting cause of a cystitis is invariably micro-organisms. Normal urine is an aseptic fluid. free from germs. Various forms of cocci and bacteria are always found in every case of cystitis.

Many of these organisms are incapable of causing cystitis in a normal bladder, which can completely empty itself, because they are passed out with the urine, before they cause any trouble, but the staphylococcus pyogenes, urobacillus liquifaciens septicus, and virulent cultures of the bacillus coli communis, by virtue of their power to break up urea and form ammonia, can, of themselves, excite a cystitis, without the aid of a favorable predisposing cause.

The micro-organisms most usually found in cystitis are the bacillus coli communis, streptococcus, pyogenes, urobacillus liquifaciens septicus, and staphylococcus.

Moullin found the following results in examing the urine from thirty cases of suppurative cystitis, most of which were in old men with enlarged prostates:

Reaction-acid or neutral in twenty-four and alkaline in six.

The bacillus coli was present in twenty-one of the acid urines and in four of the alkaline, twenty-five in all cases.

Streptococcus pyogenes was found in four acid and three alkaline urines—seven in all the cases.

Urobacillus liquifaciens septicus occurred in five of the alkaline urines.

The staphylococcus was present in eight cases, and an unidentified diplococcus in two cases.

You will see from the above statistics that the bacillus coli is the organism found most frequently in cystitis with acid urine, and the urobacillus liquifaciens when the urine is alkaline.

The bacillus coli, except in virulent cultures, has but little effect in causing the urine to become alkaline, and it may remain acid for a considerable length of time. Cultures may even be injected into the bladder without caus-

ing cystitis, unless there be present some predisposing cause.

If, however, the urobacillus liquifaciens gain access to the bladder, cystitis will almost invariably follow, because of its power to decompose urea and set free ammonia, which acts as an exciting cause for the inflammation.

The streptococcus pyogenes and the staphylococcus pyogenes aureus are both capable of causing a diffuse suppurative inflammation if they attack the bladder walls.

The streptococcus does not decompose urea and, if found in an alkaline urine, the decomposition has been affected through some other organism—usually the urobacillus. Therefore, we see that, while all cases of suppurative cystitis are produced by these or similar organisms, it can not be induced by their mere presence, so long as the bladder can be completely evacuated and its walls are in a healthy condition; and that the urobacillus liquifaciens alone is capable of exciting cystitis in a normal bladder.

If, however, we have residual urine in the bladder, or if the bladder wall is congested or eroded, cystitis will surely follow the introduction of the other forms of organisms.

We sometimes hear the term simple cystitis, by which, according to Morton, "is understood the inflammation of the bladder which is not caused by germ infection, but which results from a mechanical cause, such as the irritation from a calculus or crystals in the urine or from a chemical irritation caused by cantharides. Simple cystitis exists as a theoretical condition only, for, as a matter of fact, the complication of germ-infection occurs in every case, and in a few hours the bladder becomes infected with micro-organisms, and the simple inflammation is converted into suppurative cystitis."

Pathology: The pathologic changes are most marked in the region of the trigone and particularly so around the orifices of the ureters and the urethra. The fundus is nearly or quite normal.

The mucous coat is the part most usually involved, but all the coats, even the serous, may be involved.

In acute cystitis, we find the mucous membrane of a brilliant scarlet color, with branching distended blood vessels, which bleed easily. The polish of the mucous membrane is lost, and is ragged and velvety, with flakes of lymph adhering to it. In severe cases, we will find erosions due to the detachment of epithelium.

In very septic cases portions of the mucous membrane slough away, and hang in shreds from the bladder walls. Minute abscesses may form in the submucous and muscular coats. The urine is filled with micro-organisms, and they lie on the surface and between the epithelial cells of the bladder.

The changes in chronic cystitis resemble those of the acute form, but are more marked. The erosions are deeper, and sometimes result in actual ulceration. The mucous membrane is black or slate colored, from the escape of blood-pigment into the tissues through small capillary ruptures.

In the early stages the muscular coat may undergo a true hypertrophy of its fibers, but, as a rule, the prolonged inflammation and the vascular degeneration lead in time to a condition of fibroid induration and sclerosis of the bladder wall. The walls are thicker and denser than normal and their elasticity is entirely lost. As a result of those conditions the cavity of the bladder often becomes so small and contracted that it can only hold a few ounces. The bladder wall on contracting falls into folds, with spaces between them, from which it is difficult to empty the urine, even with a catheter.

In time the spaces become stretched, forming sac-like dilitations,, which may be as large as the bladder itself. These sacs are only covered by serous membrane, and have no muscular fibers, so that they can not empty themselves of their contained urine, and, being filled with stagnant decomposing urine, they become a favorite seat for stone formation.

Membranous Cystitis: As a result of intense septic infection of the bladder, combined with pressure on its blood-vessels, sufficient to shut off the circulation and cause gangrene, a false membrane may form within the bladder, which is thrown off as a coat of its walls.

The microscope shows these coats to be composed of epithelial cells, lymph, urinary salts, and micro-organisms entangled together.

This slough may make its exit through the urethra, or the whole thickness of the bladder wall may slough into the cavity of the abdomen.

Symptoms: As I have already consumed considerable time, I shall pass the symptamatology with a few brief remarks. Frequent and painful urination, together with pyuria and haematuria, are the cardinal symptoms.

The constitutional symptoms are caused by the absorption of toxines, and their severity depends upon the amount of poison absorbed, and the rapidity of absorption.

If the bladder can empty itself rapidly, absorption does not take place to any great extent and vice versa.

In chronic cystitis the constitutional disturbance is slight, because there is very little absorption of toxines from the bladder. But if an acute cystitis is ingrafted upon a case which has suffered with chronic inflammation, and some organism which is capable of decomposing urea enters and ammonia is formed, then the tissues, which have been altered by long continued inflammation, respond violently to the irritant, the kidneys become involved, and septic poisoning follows.

Treatment: In acute cystitis, the patient should be put to bed, given a light milk diet, and given a brisk purge.

Hot sitz-baths, diluents, the balsams, and urinary antiseptics should be administered. Opium and belladonna should be given to control the pain and tenesmus.

Autogenous vaccines may be useful in *certain* cases.

The only local treatment that can be used without doing harm, is instillations of Silver Nitrate to the posterior urethra, by means of an Ultzmann syringe.

In chronic cystitis, we must remove any local source of irritation within the bladder or any obstacle to its evacuation; remove the urine from the bladder and keep it empty, even if we have to resort to permanent catheterization, and wash the bladder out once a day with Silver Nitrate—solutions—1:4000 up to 1:1000.

If there be fungosities, they should be curetted away.

Remarks.

IMPROPER TREATMENT OF ABORTION.

JAMES E. DAVIS, A.M., M.D.,
DETROIT, MICHIGAN.

The title of this paper involves an indictment of the profession. The premises for the conclusion that this is warrantable are easily stated after one has considered the readily available data and statistics concerning the pathological events and changes of the child-bearing period in women.

The strongest evidence against the physician that abortion is improperly treated is presented by the following facts:

1. Self induced cases and those induced by physicians are numerically about equal.
2. Success in a first abortion encourages rather than refrains the mother, father, meddlesome friend and physician from participation in successive attempts.
3. Untreated syphilis in the child-bearing period is very common.
4. Uncorrected pelvic pathology in those who have previously aborted is exceedingly frequent.
5. Untreated cases of disturbed renal functions are common.

The creation and maintenance of a correct conscience in certain physicians, mothers and influencing friends may perhaps be most efficiently accomplished by a well emphasized appeal for better racial preservation and an improved health maintenance of the female during and after the child-bearing period.

It is certainly an opportune time for any appeal which has in it the ultimate aim of life production and life preservation. The destruction and desolation of the recent war will promote at least a keener economic interest in the subject under discussion.

The frequency of abortion has been variously estimated as 15.4 per cent. of all pregnancies Franz, 19.2 per cent.; Malins, Taussig 25 per cent.; while De Lee states that almost half of the child-bearing women have had an abortion before the thirty-fifth year. So large are these percentages that they can no longer be passed over lightly by the general practitioner especially since Jacobs states that 50 to 60 per cent. of all gynecologic patients date the onset of their illness from an abortion.

The mortality in reported cases of abortion is 9.75 times greater than in confinements. It is perhaps safe to assume that upwards of 70 per cent. of all abortions are criminally induced.

To argue that the indifference of the medical profession to the subject of abortion arises from the attitude that it is an inevitable event is wholly unwarranted. In the face of the foregoing facts alone we must conclude that the majority of cases of abortion are preventable.

The cases to which the appeal of church or priest or criminal law does not reach may be expected to pay attention to an emphatic portrayal of the pelvic pathology following abortion. To this may be added that an abortion will destroy for all time at least 40 per cent. of the possibility of bearing living children.

Royston has found that 41 per cent. of a series of cases studied by him were more or less permanently disabled by the effects of criminal abortion.

Prophylaxis of abortion if neglected is the

greatest factor in the improper treatment of this condition and the most potent therapeutic measure to be employed is that of teaching the full consequences of abortion pathology.

The second most important consideration arises from the failure to detect syphilitic infections. The ideal prophylaxis should require every woman contemplating procreation to have satisfactory clinical and serological evidence of no existing infection. Cases presenting positive evidence should be given prompt and efficient anti-syphilitic medication. It should be imperative that patients having had one abortion should be subjected to a seralogical test.

The assumption that syphilis is usually responsible for well advanced miscarriages and premature labors only, is very misleading and out of harmony with well prepared data upon this subject.

Miller states that most conceptions occurring in syphilitic women terminate in the first month. Gow contends that abortion in syphilitic women is quite common about the third month and these views coincide with Royston's observations. Royston further reports that one-fourth to one-third of his entire abortion material was syphilitic; 73.9 per cent. being latent syphilis. In 115 abortions due to syphilis 61.4 per cent. occurred during the first three months, 22.6 per cent. from the fourth to the sixth month while only 15.6 per cent. resulted after the sixth month. Warthin whose conclusions are drawn from extensive tissue studies believes that fully 50 per cent. of abortions are from leutic causes and asserts that the Levaditi stain, to successfully exhibit the spirochete pallida, must be used upon material within a very few hours after death. In connection with the effect of syphilis upon pregnancy, the statistics of Le Pileur are particularly instructive. Le Pileur examined 130 women, some of whom gave birth to children before their infection and others after their infection. Among these same women before syphilitic infection occurred, 3.8 per cent. aborted as compared with 78 per cent. after infection. Where 48.8 per cent. survivors were born before, only 5.2 per cent. survived after syphilitic infection.

After criminal induction and syphilis the most important positive factors are pathological changes involving the endometrium, uterine displacements, fixations and infections. To properly provide against abortions immediate and thorough treatment of these conditions should be instituted. In this relation it is to be remembered that abortion is a most frequent and usually constant causative factor for endometritis, displacements, fixations and infections. Perhaps more should be said in regard to neglected treatment of incomplete abortion than upon any other phase of this subject. It is common practice for the medical adviser to accept the patient's report that her abortion is complete and the case is dismissed without further observation until a composite of chronic symptoms are presented which have dated from the last abortion. If excellent evidence can be presented that in some of our best clinics the routine gynecological material has positive evidence of old absortions, complete and incomplete, to the extent of 17 per cent. where the condition was almost wholly unsuspected we must conclude that the total number of neglected cases needing immediate care must be very large. The writer has recently studied 474 consecutive gynecological cases by pathological examination of pelvic tissues consisting of curettings, excised portions of uteri and fallopian tubes and unresolved decidua, chorion or other evidence of recent abortion was found in 17.29 per cent. of the series. These cases were undiagnosed in regard to the condition of abortion.

The best result must come in the treatment when all cases are given the benefit of careful observation fully equal to that of a well cared for pregnancy at term or of that demanded by a major surgical procedure. If evidence is obtained of incomplete abortion the uterus should be promptly emptied. We do not believe it is a good procedure to dilate the cervix by using the uterine gauze packing. If the period of gestation has been less than 10 weeks the cervix should be dilated with branch dilators and the uterine contents removed with placental forceps supplemented with gauze upon long forceps which is made to rotate and clean the endometrium. The gloved finger should be used for exploration if the cervix will permit or the sharp curet may be used with extreme care for removal of adherent tissues. In cases beyond 10 weeks or those in which the uterus is very soft and dilatable the placental forceps, gloved finger and gauze rotator should only be used. If gauze is left in the uterus after it is emptied post operative temperature will be more frequent. The application of some one of the silver salts or a weak solution of iodine to the entire uterine canal is advisable.

It is an important mistake to proceed in the surgical care of an abortion without having first shaved the entire vulva and prepared the

surface as would be done in any surgical field prepared for a major operation.

In conclusion, emphasis should be given to the importance of this subject. (2) A very much closer attention should be given to prophylaxis. (3) Threatened abortions should be treated by extreme rest measures. (4) Incomplete abortion should receive the attention of major surgical operations. (5) Close pathological observations should be made of both gross and microscopic tissue changes and the specifically indicated treatment should be outlined therefrom.

THE EYE IN RELATION TO GENERAL DISEASES.

D. EMMETT WELSH, M.D.,
GRAND RAPIDS, MICHIGAN.

Mr. President:

When we listen to the reading of so many excellent papers that have been prepared for this Society and hear the reports of bacteriological findings and research work, the important roles of X-ray work, the preponderance of luetic conditions, the insidious contagion of the white plague, and the brilliant results of surgery in the relief and care of suffering humanity; we feel as though the last word in medicine had been spoken and that our medical lives trained along these lines would give full medical fulfillment.

Ours is a short life to conquer these mysteries. We must broaden and educate our minds to grasp all of these intricacies to become successful in our chosen fields.

There is a small organ in our economy, though likened unto the window of the soul; whose individuality becomes very often the keystone in its relationship to general disease. It is a portrayer of mentality, love, fear, anxiety, worry, health, disease, and the ending of life.

Its findings are based upon anatomical law; a prognosticator of health, disease, and death.

The relationship that exists betwen the eye and general diseases is not at all times considered. Anatomically, it is evident but complex. Its gross anatomy can only be given.

It is situated in the interorbital space. The interorbital space contains peritosteum adipose and connective tissue, eyeball, muscles, blood vessels, nerves and glands.

The periosteum is derived from the dura matter at the optic foramen. It divides the outer from the periosteum, the inner divides the orbital contents into different compartments.

The capsule of tenon forms the oculo orbital fascia, ensheaths all the organs that pass through it, forms an acetabulum for the eye and is continuous with the optic nerve. The nerves are optic, motor-oculi, abducens and pathetic. Branches of the ophthalmic divisions of the fifth filaments form the cavernous plexis of the sympathetic, ophthalmic, lacrimal, long and short ciliary, ethmoidal, super orbital, and retinal arteries.

The eyeball is suspended in space. Its contents are composed of 99 per cent. water, 1 per cent. salts, extractives, and a trace of albumen. Lymph comes from the lymphatic spaces of the uveal tract and perinuclear lymph channels, and the blood from the blood vessels.

The interocular fluid comes from the secretion of the epithelial covering of the ciliary body and the aqueous and vitreous. Its tension is maintained by the central sympathetic and unimpeded flow through the filtration angle. The tension is equivalent to a column of mercury 25 mm. high. From without we have the conjunctiva ocular and palpebral, cornea, anterior chamber, iris, pupil, capsule, lense, choroid, retina, sclera, aqueous and vitreous humor.

The external diseases of the eye are associated with microbic infections, and tubercular and luctic conditions. Iritic inflammations that were formerly thought to be 70 per cent. luetic, 20 per cent. rheumatic and 10 per cent. other causes, have now been changed.

Rheumatism like malaria will become a thing of the past and its nomenclature forgotten.

The frontal and ethmoid sinus, teeth, tonsil and gastro intestinal disorders are an important factor. Scleritis follows the same line of reasoning.

Exopathalmic goitre is a systemic disturbance. Faulty conditions of the ductless glands produce important eye characteristics. Cretinism, amaurotic—family idiocy and mongolian epilepsy give rise to corneal and fundal changes.

Diplopia, when there is a tendency to squint or when squinting exists after middle life; it is always central in character and is an expression of systemic conditions. Diplopia may be due to paralysis, sclerosis, Frederick's disease, locomotor ataxia, or tumors of the brain.

The pupil showing inequality of size—small, large, or irregular without the use of atropin is dependent upon central disturbances. The normal size of the pupil equals 4 mm. One

pupil dialated portrays paralysis, aneurism of the aorta, plural effusions, tubercular meningitis, and tumors of the brain. Both pupils dialated portrays anemia, aortic regurgitation, apoplexy, paralysis, meningitis, and thrombus of the lateral and cavernous sinus. Contracted pupils portray heart lesions, and general nervous conditions. Hemenopic pupils portray acromegalia, abscess of the brain, tumors of the chiasm, tract, lobes and pituitary body.

Nystagmus is an oscillatory movement of the eye. It is not a disease in itself but with its associate symptoms have an important relationship to cereballor abscess, tumors, amaurosis, hemorrhages, meningitis, choroidal diseases, sclerosis, and thombus of the lateral sinus and optic nerve degeneration.

Our equilibrium is maintained by our static labyrinths, orientation and complete muscle balance. A disturbed function of the nervous pathway from a non-static labyrinth with the occular balance will produce a static disturbance recognizable by nystagmic movements.

The early recognition either of the manifest or latent form is extremely important at the present time.

It is probable that more of the accidents at the aviation schools are not so much dependent upon faulty air plane construction or the occurrence of accidents in the air as upon this disturbed orientation occular imbalance.

FUNDUS.

The fundus now gives us attention. It is here that the beauties with the ophthalmoscope are portrayed. As law is founded on definite principles, so the fundus gives us absolute anatomy which is positive and its interpretation depends on the observer. The ophthalmoscope gives a magnification of twenty diameters. The nerve head is about 1-16th of an inch in diameter and the vessels vary from 1-60th to 1-40th of an inch in diameter, hence the appearance after this magnification is clear.

All cases of retinal inflammation except glioma and detached retina are dependent upon systemic conditions. Here comes into play the findings of the ophthalmoscopic picture which shows the vessels, contractions, dilatations, terminal twigs, course, their passage over each other, their passage over or below diseased areas, their tortuosity, stripes, hemorrhages, shapes, locations.

Forty per cent. Bright's and 25 per cent. diabetes are characterized by hemorrhages. Leukemia in a small percentage is characterized by hemorrhage also and pathognomonic in appearance.

The optic nerve is a prolongation of the gray matter of the brain and its envelope dural-arachnoid and pial sheaths. Wherever morbid process excites an inflammation of the optic nerve takes place. Its ophthalmoscopic picture is the same as it reacts to the same anatomic change, be it infection, autotoxic sinus diseases or faulty metabolism.

All cases of inflammatory conditions tend to atrophic change. Of the infections variety syphilis stands prominent. Tabetic condition is the cause of at least 40 per cent. and progressive paralysis about 5 per cent. Prior to atrophic change the inflammatory condition takes on different forms which is readily recognized. The nerve head appearance is very characteristic.

Choked disc. All inflammatory conditions of the nerve head in which an elevation is at or above three diopters is a choked disc.

This is synonomous with cerebral disturbance, either tumor or pressure symptoms. The size, form or location can not be given. Neurotic research and neurologic surgery has given this great importance. Thus an early symptom has prevented a number of cases from becoming completely blind by relieving the ventricles of the pent up contents.

Sight is a light wave converted into a nerve impulse. Conscious vision is brought about through the primary optic ganglia consisting of the anterior corporaquad ragemina pulvinar of the optic thalamus and external geniculate body by their interchange with each other. Co-ordinate movements are presided over by the corporaquad ragemina. Pupillary reactions are produced through the Edinger Westphals ganglion, and the movement is controlled by the motor-oculi, abducens, and pathetic nerves. The center of visual impression is the cuneus, and its store house is the anterior occipital convolution of the hippo campus major. From this complex system we enter upon the general nervous force of our economy and through the association with the brain stem consisting of the medulla oblongata corporaquad ragemina and cerebal peduncles it developes the interrelationship of the eye from an anatomic and physiological standpoint.

The physiological characteristic determines the clinical character of its lesion as disturbance of function in areas of origin of the cranial nerves are positive factors of all affection of the brain stem.

The nuclear organ of the cranial nerves except the optic and olfactory come off close to and in the floor of the fourth ventricle. Their fibers complex or follow a direct or circuitous course.

In the floor of the fourth ventricle lie the sensory track of the upper and lower extremities constituting the fillet. This is made up of bulbo thalmic tracts connecting the nerves of the dorsal column. They form afferent channels for deep sensibility and tactile impressions. The short fibers of the posterior roots terminate in the dorsal horn to which spinothalmic tracts connect themselves and pass to the optic thalamus and mix with the bulbo thalmic tract conveying conscious painful and thermic sensations.

With these anatomic points given, the complex condition and the systemic association of the eye in relation to general disease is brought about. Therefore, we can not consider it an individual unit but consider it as a compound element, an integral and basic condition of man's concept.

A CASE REPORT OF HEMORRHAGE IN THE MIDDLE EAR.

D. E. WELSH, M.D.,
GRAND RAPIDS, MICHIGAN.

The patient is a man thirty-eight years of age who came to my office complaining of deafness and a feeling of fullness in the right ear from which he had been suffering for two days.

His history revealed that he had taken a cold two weeks previous to onset of the symptoms of which he complained with lacrymosis, nasal discharge, and a sore throat. These symptoms were not very severe although the onset was marked by chills and a low temperature. The symptoms of coryza gradually disappeared, then suddenly two days before he appeared in the office he was taken with deafness and pain in the right ear.

Examination of the external auditory canal and ear drum showed retraction of the drum head, and a blood clot extending along the upper quadrant and down into the anterior inferior quadrant. There was no bulging of the posterior drum and no acute inflammatory changes, and no pus.

The case was treated expectantly. The post pharynx and to the eustachian opening an application of 15 per cent. argyrol was used as well as local oil sprays. The deafness and pain gradually subsided and the blood clot was slowly absorbed. The hearing had become almost normal when about one week subsequent to the first attack he had another hemorrhage in the same ear with identically the same findings. There were no other physical findings outside from the acute respiratory infection that he had sustained that could have accounted for this hemorrhage. The blood pressure was normal and the patient is otherwise in an excellent state of health.

Such a hemorrhage unaccompanied with suppuration is very unusual in my experience. I have seen only two other cases that were at all similar to this one but neither of the other two were cases associated with acute infection of the upper respiratory tract nor did they follow such infection. One case I remember was that of a woman who had fallen down stairs and sustained a severe jar of the spinal column. Another one was due to concussion produced by an explosion.

A CASE OF ANTHRAX.

W. T. DODGE, M.D., F.A.C.S.,
MAJOR, M.C.U.S.A.
CAMP SHERMAN, OHIO.
(Chief of Surgical Service, Base Hospital, Camp Sherman, Ohio.)

M—— Private, admitted to the Base Hospital, September 17, 1918, after ten days in camp. Diagnosis on transfer card, "Infected Sublingual Gland." History of present disease, statement of patient: "First noticed stiffness in both sides of neck, hot and cold flashes commencing on September 15th. A small pimple appeared on point of chin to right of center and a large swelling under chin. The pimple had developed rapidly but was not painful. He was feeling very ill and depressed, but had no elevation of temperature."

Observation disclosed an ulcer on point of chin one-half inch in diameter with a necrotic center and a large tender submental gland. It was obvious that the peculiar appearing ulcer was responsible for the infection and the laboratory was asked to examine a smear. The report came within an hour to the effect that a gram positive bacilli having the morphology of the Anthrax Bacilli was found. His white leucocyte count was 14000, polymorphonuclears 64.

The patient was immediately taken to the operating room and the ulcer removed according to the following technique: The surface was first gently scrubbed with soap and rinsed

with sterile water, then painted with an aqueous 8 per cent. solution of phenol and then rinsed with alcohol; painted with collodion and subcutaneous injection of 8 per cent. phenol made into tissue around the lesion, 60 cc. were used altogether. One-quarter inch outside this zone 120 cc. of 25 per cent. alcohol were injected. The ulcer and tissue one-half inch outside of it was then excised and the edges of wound painted with 95 per cent. phenol and then neutralized with 95 per cent. alcohol. The large wound was left open and kept constantly moist with Ochsner's Solution. Smears for three succeeding days disclosed the Anthrax Bacillus, after which no germs were found except the Staphylococcus Albus. The patient did well from the time of the operation, the swelling of the submental gland rapidly subsided and he made an uneventful recovery. Six days following the excision of the ulcer the wound was closed by a plastic operation, taking a flap from under the chin. Primary union occurred, leaving an inconspicuous scar, most of which is under the chin. He was discharged from the hospital October 8, 1918.

Cultures made from the patient's shaving outfit disclosed colonies of Anthrax Bacilli on the razor blade. Soap, brush, and towel were negative to Anthrax. The shaving outfit was presented to the soldier upon his departure from home for camp.

WORK AMONG INDIANS.

Exceedingly interesting is the following account, quoted from a letter written by the executive secretary of the California Association for the Study and Prevention of Tuberculosis, regarding the health and educational work undertaken by that association this summer among the Indians:

"In August, the state association opened a small clinic in one of the small towns in Fresno County where many Indians are brought in to pick grapes. With the co-operation of the tuberculosis committee, their county nurse was detailed at Clovis in the hospital and with the help of the third year students of the University of California dental school, who provided the equipment, they spent a month working with the Indians, particularly the children. The Raisin Society contributed the money for the expense of the dentists. The nurse and the dentists did a land office business and the whole thing was so successful that the Indian Commissioner set aside $600 to be placed at the disposal of the state tuberculosis association to continue simliar work in the northern part of the state. The state association is paying the expenses of the nurse and the Department of the Interior the salary for a six-months' demonstration. There are no roads in this particular locality where the nurse will work. All of the visits must be made on horseback over trails. This public health work will be done with the emphasis laid on tuberculosis. By the time it is finished we hope to have permanent Indian workers in the state. Already two of the graduates of the Phoenix School have entered tuberculosis sanatoria as tuberculosis nurses hoping to do some public health work as soon as they finish. Arrangements have been made with the director of the Junior Red Cross of the Pacific Division to place a field worker, to work in conjunction with the state association in organizing the Modern Health Crusade among the Indians throughout the state."

EVERY DOCTOR IN THE UNITED STATES should be interested in encouraging American manufacture of typically American medical products. Let us, by enthusiastic patronage of all-American manufacturers, so firmly establish the American supremacy in this field that there will never be the slightest danger of its passing back to Germany.

One typically American invention is the new war-impregnated open-mesh lace dressing for wounds, burns, bruises, etc., which bids fair to revolutionize the present-day dressing methods.

Careful tests in large industrial hospitals show that by using this lace mesh, 50 to 75 per cent. of the gauze, absorbent cotton, and roller bandages may be saved, as well as hours of the time of surgeons and nurses, not to mention the saving of agony to the patient experienced in the removal of the old sticking, secretion stiffened pad of dressings, for this remarkable dressing DOES NOT STICK.

Just by way of introduction, THE ABBOTT LABORATORIES, Chicago, Illinois, who make this Parresined Lace-Mesh Dressing offer a special outfit containing a box of six envelopes of the Lace-Mesh, an ounce of Dakin's Dichloramine-T, and four ounces of Chlorcosane—the solvent for Dichloramine-T—prepaid to any point in the United States for only $2.50. They include, without charge, in the shipment, a trial bottle of Chlorazene Dakin's water-soluble, stable antiseptic, and one of Digipoten, a typically American digitalis preparation, which leaves you no excuse for using the German. (Send for this package to-day, Doctor.) It has the ABBOTT guarantee of purity and accuracy.

The Medcal Review of Reviews announces that it has purchased the Buffalo Medical Journal which it will absorb beginning with the January 1919 issue. This is the third publication which the Review has purchased during the past few years.

The Journal
OF THE
Michigan State Medical Society
ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL

A. L. Seeley, Chairman ..... Mayville
E. W. Toles ..... Lansing
R. S. Buckland ..... Baraga

Editor and Business Manager
FREDERICK C. WARNSHUIS, M.D., F.A.C.S.
On Leave of Absence on Duty
Medical Reserve Corps, U. S. A.
D. EMMETT WELSH, M.D.,
Acting Representative Publication Committee.

All communications relative to exchanges, books for review, manuscripts, news, advertising, and subscription are to be addressed to D. Emmett Welsh, M.D., 4th Floor Powers Theater Building, Grand Rapids, Mich.

The Society does not hold itself responsible for opinions expressed in original papers, discussions, communications, or advertisements.

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December

Editorials

GREETING.

Peace is declared and the heart of every true American thrills with joy and thanksgiving. If he has done his full duty, he has also a just feeling of pride in the accomplishment of the glorious results.

The Medical Profession of Michigan, may well be proud of its record. It has promptly filled its every quota of volunteers, and to-day hundreds of Michigan's best and bravest medical men and women are "carrying on" in fields and camps of Europe and America.

There will be no "slacking" among these our Doctor Soldiers, as long as their war service is required.

Back home, in every city, village and hamlet, there are other Doctor Soldiers not wearing uniforms, who have carried on to the full limit of their abilities, financial, moral and physical, to insure the well being of America and to keep the home fires burning. To these latter a word of encouragement and warning.

We must not now at this most critical time relax to the slightest degree. Our Doctors will be coming home, and in every community the returning one must be given a sincere and hearty welcome. When he went, we as a profession promised him that during his absence we would safeguard his professional reputation and his material interests, and that when he returned he would find that his place had been kept. It is now up to us to make good our promises.

During the period of re-adjustment and reconstruction upon which we are now entering, the Medical Profession will be brought into new and different relations. No person can foresee the problems that will confront us; but whatever they may be we must be steadfast, loyal and helpful Americans, first, last and all of the time. This can only be accomplished by more complete co-operation and more thorough organization. Many County Societies have held but few meetings during the past year or more. The stress and strain of war times seemed to justify this. It is time now however, when as members of a profession which has probably done more than any other to aid in the winning of the war, that we should stand shoulder to shoulder and heart to heart, a mighty force in the glorious work of rehabilitation and reconstruction.

It is hoped that every County Society will have an out-break of the get-together and get-busy spirit and let us all go "over the top."

ARTHUR M. HUME, President.

The Publication Committee wishes to announce that we have been deprived of the valuable services of Doctor G. J. Warnshuis who in the absence of Major F. C. Warnshuis has been acting as Secretary-Editor for the Society.

Doctor G. J. Warnshuis accepted a position in Marmarth, North Dakota, and Doctor D. Emmett Welsh has kindly consented to take charge of the affairs of the office until the return of Major Warnshuis and we all know that

Doctor Welsh always makes good at any work he undertakes.

The County Societies can materially assist Doctor Welsh in the work by making their reports promptly and in detail. We expect in the near future to be able to publish monthly reports from the Clinics of the Detroit Hospital and also to continue with the reports of the University Clinical Society.

How long it will be before our Colonels, Lieutenant Colonels, Majors, Captains, and Lieutenants return to take up their work in civil life we can not tell. That we sadly missed them, and by doing the best possible, their work is largely left undone is self evident.

November 7, 1918.

To County Secretaries:

With so many doctors absent on army duty, it is making it increasingly difficult for us to obtain copy for the Journal. I would therefore urge upon you to take this matter up with the members of your societies to develop a plan for the securing of a supply of papers for publication.

A contribution of any nature will be appreciated, and the earlier the better. Send in your news notes, letters from doctors at the front and in the cantonments, and information in regard to doctors being commissioned or promoted.

Yours very truly,

D. EMMETT WELSH,

Acting Representative of the Pub. Com.

In future county secretaries are requested to send all material for the Journal, and make all checks payable to the Treasurer, Dr. D. Emmett Welsh, 4th Floor Powers Theatre Building where the office of the Journal and Society is now located.

Editorial Comments

Messrs. E. C. Schroeder and G. W. Brett have recently reported the results of an examination of 256 samples of cheese for the purpose of determining the frequency with which this product is contaminated with virulent tubercle bacilli at the time it reaches the consumer. The general conclusions of these studies are that cheese of the kind that requires some time to ripen rarely if ever contains true, living pathogenic bacteria when it is marketed, while cream cheese is often heavily contaminated with tubercle bacilli of the bovine type. Hence cream cheese should be made either from pasteurized milk and cream or from milk and cream obtained from cows which have been proved free from tuberculosis. Cottage and skim milk Neufchatel cheeses are much less frequently infected with tubercle bacilli than cream cheese, but contamination is frequent enough to indicate that they should not be made of raw milk. This brings us to the conclusion which has already been reiterated from time to time that the public is safeguarded only when using pasteurized milk.

An interesting feature of the present epidemic is the change in the attitude of the public toward public health methods. The changes incident to the war have caused the public to accept freely orders and suggestions as to their mode of living. When health authorities place a ban on public gatherings, when they insist that the windows of public conveyances be kept open, when they insist on absolute quarantine in order to stop the spread of the disease, the public is ready to obey, and does obey to the fullest measure. Another feature is the confidence of the public in public health authorities, apparently the result of the intense education of the public in prophylaxis of disease which has been going on during the past decade. Orders concerning the epidemic are received without panic or alarm.—*Jour. A.M.A.*, Oct. 12, 1918.

The United States Government is resolved to do its best to restore every wounded American soldier and sailor to health, strength, and self-supporting activity.

Until his discharge from the hospital all the medical and surgical treatment necessary to restore him to health is under the jurisdiction of

the military or naval authorities, according to the branch of the service he is in. The vocational training, the re-education and rehabilitation necessary to restore him to self-supporting activity, is under the jurisdiction of the Federal Board for Vocational Education.

If he needs an artificial limb or mechanical appliance the Government will supply it free, will keep it in repair, and renew it when necessary. If after his discharge he again needs medical treatment on account of his disability, the Government will supply it free. While he is in the hospital and while in training afterwards the soldier or sailor will receive compensation as if in service and his family or dependents will receive their allotment.

A wounded soldier or sailor, although his disability does not prevent him from returning to employment without training, can take a course of vocational training free of cost and the compensation provided by the war-risk insurance act will be paid to him and the training will be free, but no allotment will be paid to his family.

Every Liberty Bond holder who holds his bond is keeping up a part of this great work of restoring to health, strength, and usefulness the men who have suffered for their country.

In the year past the Bureau has written nearly thirty-five billion dollars of this insurance, or approximately as much ordinary life insurance as there was outstanding with all the life-insurance companies in the world at the beginning of the year. Our Army and Navy are more than 90 per cent. insured and new applications are now being received for more than a billion dollars of this insurance per week.

The Bureau has made awards and is paying monthly compensation on more than 5,000 death and disability claims, and it is paying monthly installments of insurance on more than 9,000 insurance death claims.

To the Disabled Man:

Your handicap is not a handicap unless you are determined to make it one. The folks back home know that you do not wish to be a dependent idler for life, and the Government proposes to help you re-establish yourself in a civil employment as an independent worker with every opportunity for advancement. The Government has provided hundreds of courses, among which there is one precisely suited to meet your needs, one in which you can become 100 per cent. efficient whatever injury you may have suffered.

You will not be compelled to take any training whatever, but you will be given expert advice and help in getting such training as you need, if you choose to take it. Your disability pension will not be reduced because you take training and learn to work. Your wages will be additional income, and your pension will continue in the same amount that will be paid if you do not take training. The training is free and you and your family will be maintained during the period of training.

More than thirty billion dollars of Government insurance has been written to date to protect America's fighting forces and their families. Approximately 3,400,000 insurance applications have been received by the Bureau of War-Risk Insurance of the Treasury Department up to the close of business.

In England the insurance companies regard the additional risk to men who have lost their hearing so negligible that they do not ask for any additional premium in cases where the infirmity is a result of war services.

Doctor W. J. Du Bois, Vice Chairman of the Council was called to Luther, Michigan, by Doctor Earl Fairbanks to do some operative work. While there he was suddenly attacked with the "flu" and was confined to Doctor Fairbanks' home for about two weeks, and is now slowly recovering. We wish to extend our best wishes for a speedy recovery.

The Federal Board for Vocational Education which has its headquarters at Sixth and E. streets, Washington, D. C., has been entrusted with the task of training and placing disabled sailors and soldiers in suitable employments. Through this Board every disabled soldier or sailor is entitled to the benefits of the War-Risk Insurance Act, the benefits of such of the following services as he may require; vocational advice and assistance in selecting a suitable occupation; help in returning to the old occupation again if advisable; support while in training for a new occupation or for greater proficiency in an old occupation; a course of preliminary training; a period of probationary employment; permanent employment in a desirable position; and follow-up work to protect him from mistakes and exploitations.

The Government has provided hundreds of

courses, and proposes to help them re-establish themselves in civil employment as an independent worker, with every opportunity for advancement.

Many of the men in France who have taken vocational training obtained better positions than before they went into service. The Director of Vocational Training in Canada states that many of the men who were common laborers before the war have through retraining been enabled to take positions of responsibility requiring not only skill but, what is more important, judgment.

Correspondence

November 4, 1918.

Dr. Charles E. Chadsey,
Superintendent of Schools,
Detroit, Michigan.

My Dear Dr. Chadsey:

I have been requested by Mayor Marx, and also by a resolution of the Board, to thank you and those teachers of your staff who volunteered to help this Department in the present epidemic.

While the condition which the teachers volunteer organization was formed to cope with has, fortunately, not been reached in Detroit, the results actually achieved have not only repaid for the work done in forming it, but have shown what its value would have been in preventing the terrible distress which has been reported from eastern cities.

It was Detroit's duty to prepare for the worst that could happen. Reports received daily from health departments of eastern cities showed that the regular machinery for fighting epidemics was entirely inadequate, and that the medical and nursing forces of those cities were completely swamped. Thousands of cases were unattended and many reports were brought in daily of bodies being found lying in houses—some of them having been dead as long as a week—with every other person in the house seriously sick.

In one eastern city the daily death rate reached 766, with 4,578 deaths in one week. In another city the daily list reached 711, with 4,599 deaths in one week. Hundreds of bodies laid for days in the city morgue because there was no way of getting them buried or even incases in coffins. Cemeteries had from one to two hundred unburied bodies on hand at a time and had to call on city employes to dig graves.

The health officer of Lynn, Massachusetts, on visiting this city, reported that he had been compelled to dig long trenches to lay bodies in side by side and his advice to Detroit was to get ready to take care of thousands of unattended sick. Other cities reported similar conditions. To meet such a situation in Detroit, prevent such distress and keep our war work going, it was recognized that some large volunteer body must be formed at once—to wait until it developed would be too late.

The mobilization of all who would volunteer from the city's teaching force was thought of, and after assurances of your co-operation, was decided upon. Objection was made that teachers visiting homes of the sick were being subjected to danger. This fact had not been lost sight of. The men who go to France are also being subjected to danger, but they must go, and the women who volunteered—none but volunteers were accepted—were just as truly enlisting in the war as the men who cross the ocean, for to keep up the health of the city and protect the 150,000 war workers in Detroit is a vital part of the war.

The smoothness and rapidity with which this great organization of nearly 2,000 people got down to practical work was surprising. In the few days—practically four—that the organization was at work, it made over 100,000 calls. It investigated and made report on 15,647 cases. It found 434 families where medical aid and nursing care, food or material relief was needed. These cases were of varying distress, the first one found showing a man dead of influenza with wife and four children sick and no medical or other care. Upon reports made by the organization 131 patients were sent to hospitals.

This magnificent record of work actually accomplished stamps the organization as being not only the largest, but by far the most efficient and effective fighting force that has been marshalled at any point in the United States to fight the present epidemic. With such a force, capable of visiting every home in the city in four or five days, and with co-operating organizations standing ready to supply all wants discovered, the scenes of distress witnessed in eastern cities would have been impossible in Detroit, and the epidemic could not have spread as it did in cities where thousands of families were unattended.

Permit me, on behalf of this Department, and by direction of the Mayor, on behalf of the city of Detroit, to sincerely thank you and the teachers of your staff, not only for the service they did render, but for the patriotic offer of a still greater service, which, fortunately, has not been needed.

Will you kindly bring this letter to the attention of all the teachers of your staff. With personal regards, I am,

Very sincerely yours,
J. W. INCHES,
Commissioner of Health.

November 13, 1918.

From: Mr. Charles H. Conner, Chief, Platinum Section, and Lieut. Col. F. F. Simpson, M.C., U. S. A., Chief of Section of Medical Industry.

To: The Doctors and Dentists of the Country.

Subject: Cancellation of Appeal for the Collection of Scrap Platinum.

1. The Platinum Section and the Section of

Medical Industry, War Industries Board, desire to express appreciation of the hearty response made by physicians, dentists and others when the call for scrap Platinum was made.

2. As the Governmental demand for Platinum in the making of explosives, etc., has been tremendously decreased by the curtailed war program, it is requested that no further scrap Platinum be tendered to the Government through the channels indicated in our communication of September 17th, 1918.

CHARLES H. CONNER,
Chief, Platinum Section.
F. F. SIMPSON, M.C., U. S. A.,
Chief of Section of Medical Industry.

Deaths

Doctor John C. Brown, of Battle Creek and a member of the Calhoun Medical Society died October 29th.

State News Notes

CONVICTED OF PRACTICING MEDICINE.

Harold Jackson (Olio de Gahiliani) convicted of practicing medicine under firm name of Electro-Medical Doctors Detroit, was given a fine of $200 and six months sentence in the Detroit House of Correction. Notice of appeal was taken but bail denied. In the meantime Jackson is serving out his sentence. Several other cases will be started upon his release six months from this.

November 13th, 1918.

Major W. T. Dodge, formerly of Big Rapids, now Chief Surgeon at the Base Hospital, Camp Sherman, Chillicothe, Ohio, and Mrs. Anna Foster, of Reed City, were married October 18th in Detroit, Michigan.

Doctor Louis J. Hirschman, Major M. C. U. S. A. has returned from "over there" and is again located in the Kresge Building, Detroit, Michigan. He will limit his practice to abdominal surgery and enteroproctology.

It is probable that the epidemic of Spanish Influenza may cause some radical changes in Michigan's health laws.

Pontiac is the latest city in Michigan to join the ranks of the places where a permanent anti-tuberculosis clinic has been established.

The Michigan State Medical Society would endorse the action taken by the Wayne County Medical Society in regard to the campaign against quack doctors.

Doctor H. M. Joy, Captain in the Medical Corps, formerly of Calumet, Michigan, has been transferred to the evacuation hospital at Camp Greenleaf, Georgia.

Doctor Ralph H. Pino will succeed Doctor Stewart Hamilton who has been commissioned Captain in the Medical Corps, as Superintendent at Harper Hospital, Detroit, Michigan.

Doctor Levi W. Gardner, of Harbor Springs, has been appointed local Health Officer to succeed Doctor E. A. Runyan, who resigned and moved tc Flint, Michigan.

Doctor W. B. Clark, of Saginaw, has been appointed Medical Inspector for all of Saginaw County outside the city of Saginaw.

Doctor T. C. Lieu, interne at Grace Hospital, Detroit, Michigan, is the first Chinese physician to register under the Harrison Narcotic Law, in Detroit.

Owing to the ban placed upon all public meetings by the Governor of the State, there were no meetings of the various county societies.

Captain F. C. Warnshuis, our editor, has been promoted to Major, and word has been received that he arrived safely overseas.

Doctor Peter Vermeulen, of Grand Rapids, has been commissioned First Lieutenant in the Medical Corps.

Doctor A. J. Reynolds, of Flint, Michigan, has been commissioned a Captain in the Medical Corps.

Doctor Herbert E. Randall, of Flint, Michigan, has been promoted to Major.

Book Reviews

A TEXT-BOOK OF PHYSIOLOGY FOR NURSES. By William Gay Christians, M.D., Professor of Anatomy, Medical College of Virginia, and Charles C. Koshell, M.A., M.D., Professor of Physiology and Pharmacology, Medical College of Virginia. Illustrated. Published by C. V. Mosby Co., St. Louis. Price, $1.75.

HYGIENE FOR NURSES. By Notie Muney, M.D., Lecturer in Hygiene, Chemistry, and Bacteriology, Logan H. Roots, Memorial (City Hospital) Training School; Assistant Instructor in Surgical Technic, University of Arkansas, Resident Physician of City Hospital and Member of Visiting Staff, Little Rock, Arkansas. With 75 illustrations. Published by C. V. Mosby Co., St. Louis. Price, $1.25.

NURSING IN DISEASES OF CHILDREN. By Carl G. Leo Wolf, M.D., Chief of Clinic for Sick Babies and Children for the Health Department of the City of Buffalo, N. Y.; Instructor in Pediatrics, University of Buffalo Medical Department. With 72 illustrations. Published by C. V. Mosby Co., St. Louis. Price, $2.50.

These three little books compromise a set that any nurse may be proud to have in her library and each very properly supplements the other. To

the superficial thinker it might upon first thought seem a simple matter to write a text-book for nurses, something that can be executed in an off-hand way with little need for searching references nor precise and accurate statements. It is far from simple, however, for the physician with his own point of view and his own hobbies and interests to place himself in the position of the nurse and consider the problem of making elementary, scientific facts clear and intelligible to her so that she can incorporate them in her conceptions of nursing skill. On the other hand it is equally difficult for one to imagine all the minor details of practice and method that a nurse desires instruction in unless he is constantly in touch with a nurse's training school himself.

Very few, therefore, however talented and scholarly they may be are adapted to writing this type of medical text-book. It is decidedly in consideration of these requirements that we take delight in whole-heartedly recommending these three text-books.

ABSTRACTS OF WAR SURGERY. Prepared by the Division of Surgery, Surgeon-General's office. Cloth. Price, $4.00. Page. 434. St. Louis, C. V. Mosby Company, 1918.

This is a compilation from the Journals of the American, English, French and Italian. It is a condensed text-book for ready reference. It is up to date in all departments of war surgery and should serve the busy practitioner in all emergencies.

HEADACHES AND EYE DISORDERS OF NASAL ORIGIN. By Greenfield Sluder, M.D., Clinical Professor and Director of the Department of Laryngology and Rhinology, Washington University Medical School, St. Louis, 272 pages with 115 illustrations. C. V. Mosby Company, St. Louis, 1918.

To understand and successfully treat the nose one must have a thorough knowledge of this anatomical complex region. The author has made himself a careful student and has elucidated many things that were obscure, exceedingly plain. The nervous element entering into the causative factor of headache are graphically portrayed in the syndrome of ganglionic neurosis. The hyperplasia of the mucosa which are so often intractable are made plain and the relief to be obtained from the vacuum frontal headaches presents to the reader a long-felt want.

The volume is a very useful adjunct to the specialist and general student of these difficult anatomic points.

THE COMPOSITION OF CERTAIN PATENT AND PROPRIETARY MEDICINES. Compiled by John Phillips Street, Chemist in charge of Analytical Laboratory, Connecticut Agricultural Experiment Station. 274 pages; more than 2,500 remedies; over 3,100 analyses. American Medical Association, 535 North Dearborn St., Chicago. Cloth, $1.25, postpaid.

While the A.M.A. Journal has laboriously continued the fight against the patent medicine venders and the street corner fakers, it is pleasant to think what once existed but now is nearly eliminated. In looking over this work many familiarities appear; Lydia Pinkham, Piso's Eye Salve, a sure cure for piles, and a score of others. Human nature is always the same and there are still the credulous ones. This work on the fakers' income is an amusement and should be read and stored as medical history.

SURGICAL CLINICS OF CHICAGO, VOLUME II, NUMBER IV. Comment is unnecessary as this is so valuable a volume to every practitioner that he can not afford to be without a copy of same.

ROENTGEN DIAGNOSIS OF DISEASES OF THE HEAD. By Arthur Schüller. Translation by Fred F. Stocking, M.D., M.R.C. Approved for publication by the Surgeon General of the United States Army. Published by C. V. Mosby Company, 1918.

This book is very welcome in that the subject has developed to date only a limited literature.

The author takes up in a painstaking manner first the normal skull, then the non-pathological variations, then the pathology due to external and local etiology. The anatomical handling reminds one of Gray while the careful detailed consideration of the skull pathology makes one think of Zieglar.

The book is 300 pages long and contains 97 illustrations but there is no attempt at treatment advice. We surely have here a distinct addition to our Roentgen Literature which ramifies in many other directions and we wish to thank those of our profession who helped make the above book possible.

THE WASSERMANN TEST. By Charles F. Craig, A.M. (Hon.), M.D. (Yale), Lieutenant Colonel, Medical Corps, United States Army; Fellow of The American College of Surgeons; Formerly Assistant Professor of Bacteriology and Pathology, Army Medical School, and George Washington University; Commanding Officer, Department Laboratory, Central Department, United States Army, Fort Leavenworth, Kansas. Cloth. Price, $, 239 pages with 13 illustrations. St. Louis, C. V Mosby Company, 1918.

This work is from the pen of syphilographer, who presents the subject in as practical a manner as possible. As stated in the preface, the author has quoted from some of the more recent investigators on the subject for his material, and has added his personal views and experiences; conservatism is shown in all important procedures. The chapters on the effect of treatment upon the Wassermann reaction, and the Wassermann test upon the cerebrospinal fluid, are well written and show a careful, clinical and experimental study of the subject.

Miscellany

SURGEON GENERAL ISSUES HEALTH RULES.

In connection most immediately with precautions against the spread of so-called "Spanish Influenza," but more generally in relation to the anti-tuberculosis campaign, unusual interest and importance attaches to the following rules for the avoidance of respiratory diseases which were issued by the Surgeon-General of the Army on September 21.

1. Avoid needless crowding—influenza is a crowd disease.

2. Smother your coughs and sneezes—others do not want the germs which you would throw away.

3. Your nose, not your mouth, was made to breathe through—get the habit.

4. Remember the three C's—a clean mouth, clean skin, and clean clothes.

5. Try to keep cool when you walk and warm when you ride and sleep.

6. Open the windows—always at home at night; at the office when practicable.

7. Food will win the war if you give it a chance—help by choosing and chewing your food well.

8. Your fate may be in your own hands—wash your hands before eating.

9. Don't let the waste products of digestion accumulate—drink a glass of water on getting up.

10. Don't use a napkin, towel, spoon, fork, glass, or cup which has been used by another person and not washed.

11. Avoid tight clothes, tight shoes, tight gloves—seek to make nature your ally, not your prisoner.

12. When the air is pure breathe all of it you can—breathe deeply.

BABIES IN A WAR INDUSTRIES TOWN.

The inadequacy of the protection afforded babies and the imperative need for more effective means of preventing the deaths of little children in one of the towns where conditions have been greatly changed by the growth of the war industries are revealed in a report on Waterbury, Connecticut, made public to-day by the Children's Bureau of the U. S. Department of Labor. Even before the war insanitary housing conditions, imperfect civic provision for educating mothers in the care of their children, indifference to the need of giving the many foreign born mothers the advice and help they need to make them assimilate American ways and customs have militated to keep up the infant death rate which averaged for the years 1910-15 146.5 per thousand or about one death in every seven live births, which is nearly half again the rate for the U. S. Registration Area.

But the rate was not uniformly high for all groups in the city. Two thousand one hundred and ninety-seven babies born between June 1, 1913, and May 31, 1914, were included in the study. In each case a personal visit to the home was made, and the mother, or if she were not living, the person who had the child in charge was interviewed. Rich and poor, native and foreign born were alike included and every one of them willingly gave the information desired. Two hundred and sixty-three of the babies had died before they were a year old. But of the babies of fathers who earned less than $450 a year about one in six died during its first year, whereas when the father's yearly income was as much as $1,250 the death rate was greatly reduced, and about one baby in every fifteen died. And a fifth of the births in Waterbury were in families where the father earned less than $450 a year. By far the largest number of fathers in this lowest income group were employed in the factories. Waterbury is the largest brass and copper manufacturing city in the United States. The foreign born men were much more poorly paid than the natives. About a third of the foreign born fathers earned less than $450 a year, whereas of the natives only about a twentieth belonged to this low paid group. Few foreign born fathers were earning as much as $1,050.

But low income is not the only influence working for a high infant mortality rate among the children of foreign born parents. The infant mortality rate among the Lithuanians as a whole, who form an important part of Waterbury's population, is far higher even than that for the lowest income group to which many of them belong. Of the babies born to Lithuanian mothers more than one in five died before it was a year old. The babies of Irish mothers died at a slightly lower rate. As a whole the babies of foreign born mothers died at a rate more than a third higher than that of the babies of native mothers.

The report points out several reasons for this higher rate among the children of the foreign born. The foreign born mother has to contend against more dangers to her child's health than those which usually threaten children of fathers whose earnings are low. The isolation of the Lithuanian group especiallly tends to keep the families from growing accustomed to their surroundings in this new country. Many of them have come from the free outdoor life of the farm to wrestle with crowded tenement conditions. The Lithuanians show the largest per cent. of babies fed artificially; they show also the largest per cent. of infant deaths caused by improper feeding, the neglect that comes with ignorance of modern hygiene. poor housing, combined, it may be, with summer heat against which other conditions have left the babies unprotected.

As a whole Waterbury shows an infant death rate from preventable digestive diseases considerably higher than that for the Registration Area. The fact that modern hygiene knows how to prevent certain digestive diseases of babies is used as an argument for extending work that will give every mother the knowledge without which she can not protect the lives of her babies.

Waterbury has not ignored the need for such civic work. It has a visiting nurses' association, and since the survey was made by the Children's Bureau the association has extended its work. Few of the Lithuanians, however, who appear to be most in need of wise direction and advice in adapting their mode of living to the conditions in their adopted land have availed themselves of the organization's services.

The housing conditions in Waterbury were seriously congested even before the influx of war workers. Disrepair of buildings, inadequate and faulty plumbing, infrequent and irregular garbage collection, a milk or food supply that is insufficient or impure must, the report states, be controlled by the city if its citizens are to be guarded from disease. Yet in 1914 Waterbury appropriated only about a third of the recognized minimum for the work of its health department and in 1917 it appropriated even less per capita, in spite of its growing population. Even the greatly increased wages do not enable Waterbury's population to purchase healthful living conditions, without which the health of the community and the lives of the babies in it can not be conserved.

DRUG, CHEMICAL AND SURGICAL INSTRUMENT BUSINESSES WERE ESPECIALLY SOUGHT BY GERMANS— RICHARD KNY APPEARS TO HAVE BEEN VON BERNSTORFF'S FAVORITE.

A comparison of revelations made by the office of A. Mitchell Palmer, alien property custodian, in Germany, but is a naturalized American citizen the world war until the present shows a startling repetition of certain names among those representing German interests. These revelations have come at considerable intervals, so that only by a close comparison of the names involved does it become clear that the trail of the Imperial German Government left here by former Ambassador von Bernstorff, usually revolves around the same group. A name often mentioned in these revelations is that of Richard Kny. Kny is a well-known Brooklynite, living at No. 237 Garfield Place. He was born in Germany, but it a naturalized American citizen and the father-in-law of George Simon, an enemy alien, who was manager of the Heyden Chemical Works at Garfield, N. J., until they were sezied by the alien property custodian.

It is said in authoritative circles that the work of unraveling the connections of Kny and his attempts to control the drug, chemical and surgical instrument business in the United States have been far more interesting and absorbing than any detective fiction ever written. The facts in Kny's case are said to have far outstripped the imagination of any literary dreamer in working out international plots and situations.

The four principal companies in which Kny has been found to be either the head or heavily interested are the Heyden Chemical Works, Garfield, N. J.; Eiseman Magneto Co., New York; Kny-Scheerer Co., New York, and the Chemical Exchange Association, the last-named being the camouflage devised by Kny and Dr. Hugo Schweitzer to control the carbolic acid supply of the United States and prevent it from going into the manufacture of munitions to be used against Germany. The official revelations in connection with this last-mentioned concern were made public by Mr. Palmer on October 18th.

The cunning and secret work of Kny and his associates was so well covered up that only the most careful work on the part of Mr. Palmer's assistants succeeded in uncovering it. The question which now interests the drug, chemical and surgical instrument trade is whether or not other companies will be found to be the property of the same crowd of aliens with which Kny was associated and which are believed to be responsible for the long list of explosions, burnings, ship sinkings and other outrages which have infuriated the people of the United States nearly every week since the war began.

The Kny-Scheerer Corporation, one of the biggest dealers in surgical and electro-medical instruments, scientific apparatus, hospital and sanitarium supplies in the United States with offices at No. 404 West Twenty-seventh Street, New York, used the identical trademark as the Jetter & Scheerer Co., of Tuttlingen and Berlin, Germany. This trademark appears on the letter-head of the Kny-Scheerer Corporation and appears in the advertisements inserted in German technical publications by the Jetter & Scheerer Co., of Germany. Official investigation has shown within the past few days that both of these companies are still using this trademark.

The Kny-Scheerer Corporation had the exclusive American agency for the products of its parent concern, the Jetter & Scheerer Co. The German concern claimed to be controlled by the German Government and E. S. Beck, its secretary.

Evidence now in the hands of the alien property custodian shows conclusively that the Imperial German Government, through careful investments made by Ambassador von Bernstorff in this country, tried and almost succeeded for a time in controlling the drug, chemical and surgical instrument business of this country and imperilling the supplies of these articles required by the army and navy of the United States. It is believed the master brains who advised von Bernstorff and Dr. Albert, the official German go-between, were Dr. Hugo Schweitzer, former chemist of the Bayer Company, and Richard Kny.

The cleverest deal with which Kny has so far been connected by Federal officials is that which was put through in the case of the Heyden Chemical Company. This concern has an office at No. 135 William Street, Manhattan, and a large plant at Garfield, N. J. It was owned for many years by the Chemische Fabrik von Heyden, of Germany, and was managed by George Simon, son-in-law of Richard Kny. When the Government seized this plant some weeks ago, it was found that an elaborate effort to disguise the German ownership had been made by Simon. The company was an exceedingly prosperous one and in 1917 did a business in excess of $4,000,000. The profits sent to the German owners in 1916 were $1,026,626.

When Francis P. Garvan investigated this deal for Mr. Palmer, he discovered Simon had obtained $149,000 in cash from his father-in-law at the time of the breaking of relations between the United States and Germany with which the German owners were alleged to have been bought out. This deal was knocked in the head by the action of the Government in seizing the plant and preparing to sell it to owners known to be real Americans.

While Federal officials in touch with developments in the investigation into Germany's hold on the American drug, chemical and surgical business refuse to make any comments in advance of official announcements, it is plain that further disclosures are expected regarding the chain of industries over which von Bernstorff gained an evil sway. In view of the uniformity with which the same group of men were used by him in putting through the deals already uncovered by Mr. Palmer's men, there is little reason to doubt that the same agents will be found to have been used in the deals which are known to have been made, but which have not yet been officially announced. In the meantime, the drug and affiliated lines are looking forward with a good deal of interest to the result of the investigations now under way.

This should be a warning to the medical profession to investigate when purchasing medical and

surgical supplies, and to pledge themselves to use only made in America goods. The ramifications of the German intrigue has been so great and insidious that the busy doctor in many instances failed to consider that the contribution of his little mite primarily did amount to something as in the aggregate it represented millions. We should in the future discriminate against anything that savors Germany as articles in our line just as good if not better can be obtained in our own country instead of giving them our patronage.

(Deaths in America greatly outnumber war's casualties among American troops.)

The influenza epidemic has thus far taken a much heavier toll of American life than has the Great War. The total loss of life throughout the country is not known, but the Bureau of the Census has been publishing, for 46 large cities having a combined population estimated at 23,000,000, weekly reports showing the mortality from influenza and pneumonia. These reports, which cover the period from September 8 to November 9, inclusive, show a total of 82,306 deaths from these causes. It is estimated that during a similar period of time the normal number of deaths due to influenza and pneumonia in the same cities would be about 4,000, leaving approximately 78,000 as the number properly chargeable to the epidemic.

The total casualties in the American Expeditionary Forces have recently been unofficially estimated at 100,000. On the basis of the number thus far reported, it may be assumed that the deaths from all causes, including disease and accidents, are probably less than 45 per cent. and may not be more than 40 per cent. of the total casualties. On this assumption. the loss of life in the American Expeditionary Forces to date is about 40,000 or 45,000.

Thus, in 46 American cities having a combined population of only a little more than one-fifth the total for the country, the mortality resulting from the influenza epidemic during the nine weeks' period ended November 9 was nearly double that in the American Expeditionary Forces from the time the first contingent landed in France until the cessation of hostilities.

For the 46 cities taken as a group, the epidemic reached its height during the two weeks ended October 26, for which period 40,782 deaths were reported—19,938 for the week ended October 19 and 20,844 for the following week. Since October 26, however, the decline has been pronounced. During the week ended November 2, 14,857 deaths occurred, and during the following week only 7,798. The only city in which the number of deaths reported for the week ending November 9, exceeded the number occurring during the previous week was Spokane, Washington.

In general, the epidemic traversed the country from east to west. In a number of eastern cities—notably Boston, where the greatest mortality occurred during the week ended October 5—the largest numbers of deaths were reported for earlier periods than that which covered the height of the epidemic for the 46 cities taken as a group. On the other hand, in New Haven, New York, Pittsburgh, and Rochester the maximum mortality occurred somewhat later than in eastern cities generally. In Baltimore, Buffalo, and Philadelphia the two-weeks' period ended October 26 showed the greatest number of deaths. For the entire nine weeks' period, the greatest mortality due to the epidemic, in proportion to population—7.4 per one thousand—occurred in Philadelphia; and the next greatest—6.7 per 1,000— was reported for Baltimore.

The present epidemic, as was to be expected, has given rise to the publication in the newspapers of all kinds of "sure cures." Their number is legion, and they vary in character from those with a semi-scientific basis to others with no basis whatever. The research worker should view his results with a cold, dispassionate conservatism, before considering publication with resultant harm to himself and the public. The United States Public Health Service, having been beseiged with inquiries regarding this and that method of treatment, has issued a special bulletin in which it is emphasized that there is no specific cure for influenza yet known and the chief reliance must be placed on good hygiene, good nursing and symptomatic treatment.—From Editorials in the *Journal A.M.A.*, November 2, 1918.

We would refer our readers to the editorial "Observations on the Present Epidemic of So-Called Influenza in Europe," and an article in regard to the value of vaccination against influenza under the heading of "Current Comment" appearing in the *Journal* of the *A.M.A.* of November 9th.

Last week the deaths of eighty-one physicians were recorded in the Journal of the American Medical Association. This week the deaths of 174 physicians are recorded making a total of 255 in two issues, and of these 154 are definitely known to have been due to influenza or pneumonia; undoubtedly in the majority of cases in which the cause is not given, it was influenza. These obituaries are records of sacrifice to duty. A layman may, if he desires, keep from exposing himself to any infection; but the physician must go when called without thought of consequences to himself. However, as one considers the list one wonders whether or not some of these deaths might have been prevented by adopting some of the simple precautionary methods that have been suggested, such as the wearing of the face mask. It is proverbial that physicians like preachers, give advice which they themselves do not consistently follow.—From the Editorials in the *Journal, A.M.A.*, November 2, 1918.

The Madrid correspondent of the Journal wishes it clearly understood that Spain does not care to take the responsibility for having initiated the present epidemic of respiratory disease. His protestations are both informing and amusing. The Paris correspondent, feels too that the onus of responsibility should not be placed on Spain since the epidemic occurred both in France and in Germany. As one views the devastation which the disease has caused he is inclined to sympathize with the

efforts of Spain or any other country to pass the buck.—From Editorials in the *Journal* of the *A.M.A.*, November 9, 1918.

Damage to Trees From Tarred Streets.—The injurious effects of tarred roads upon neighboring vegetation have been described in numerous articles emanating from both American and European sources. The damage is caused almost, entirely by the very fine dust raised by the passage of motor cars. This dust settles slowly and is most abundant on low plants and the lower branches of trees. Once deposited, the small particles of tar give off injurious vapors when strongly heated by the sun. Plant and parts of plants not directly reached by the sun never show this damage, while plants exposed to the sun are injured in proportion to the intensity and the duration of sunshine. The best remedy is to keep down the dust by the regular and abundant watering of the roads.

THE RED CROSS INSTITUTE FOR THE BLIND.

The purpose of the Red Cross Institute for the Blind is to supply the necessary economic and social supervision of blinded marines, sailors, and soldiers, after their discharge from military service. The Institute will work in conjunction with the Surgeons General of the Army and Navy and is, therefore a national activity of the American Red Cross.

This work will begin as soon as a sailor, soldier, or marine who has lost his sight, returns. His past life will be studied in order to ascertain his previous occupation, his stability as a workman, his former wages, his moral career, his social environment both before and after his entrance into the Army or the Navy and that to which he must return, his military or naval record, and the occupational possibilities of his home community. The present wages of the average blind man are deplorably low. New fields must be explored and new occupations discovered in order to help the blind to become self-supporting wage earners.

A manufacturers' commission is being formed, the personnel of which is to be drawn from among large manufacturers, and this commission will cooperate with the National Manufacturers' Association and other organized bodies of manufacturers. The average business man stands in awe of a blind man and is afraid to employ him because if the man fails to "make good" he "would hate to discharge him." The Institute will, therefore, not only place the man, but, if he proves inefficient, it will itself remove him, thereby relieving the employer of all embarrassment. The Institute does not believe in employing the blind on a charity basis. It should be strictly a business transaction.

Blind workers may be divided into five classes: those who can work in shops with the seeing, in shops maintained for the blind, in commercial enterprises, in agricultural pursuits, and those who can work only at home.

Books for the blind will be embossed. These will be in the form of technical and current literature. The Institute will co-operate with the Commission on Uniform Type and the Matilda Ziegler Magazine for the Blind, the most widely read publication for current literature printed in embossed type in the country, to stimulate the production and distribution of reading matter for the blind. Blind men soon become despondent if they are not fully occupied. One of the most potent factors in the failure of many blind men is the lack of appreciation of their difficulties and mistaken sympathy on the part of their families. It is essential to provide against this obstacle of future success.

The first difficulty that will be experienced by the average individual upon leaving the Government Training School and starting his life work, will be to provide himself with the tools and materials of his trade. The Institute will provide such essentials through some fair arrangement.

The Red Cross Institute for the Blind is located at Baltimore, Maryland.

Medical and Agricultural Schools in West Africa.—The American consul at Dakar, Senegal, reports that the French authorities have just established at that place a medical school and a school of agriculture, both for the education of natives.

Honey and Honey Plants.—According to an estimate of the U. S. Department of Agriculture, the honey crop of this country for 1918 will approximate 250,000,000 pounds. The AMERICAN BOTANIST points out, in this connection, that as the nectar of flowers does not become honey until it is worked over and partly evaporated by the bees, these insects must move fully 150,000 tons of material during the season to make the honey crop, not including the honey consumed by the bees themselves. About half of this honey is produced from the nectar of white clover. Next in importance comes alfalfa, followed closely by sweet clover. These are all leguminous plants, as is logweed, which produces much honey in the tropics. Among the few plants yielding a honey that can be recognized are cotton, basswood, tulip tree, buckwheat, goldenrod and mountain sage.

NEW AND NON-OFFICIAL REMEDIES.

Sola·gentum-Squibb.—A compound of silver and gelatin containing from 19 to 23 per cent. of silver in colloidal form. It is used in solutions containing from 1 to 25 per cent. or more. It is also used in the form of bougies or suppositories. No precipitate is produced when sodium chlorid or albumin solutions are added to solutions of Solargentum-Squibb. E. R. Squibb and Sons, New York (*Jour. A.M.A.*, October 12, 1918, p. 1219.)

Phenmethylol.—A nonproprietary brand of benzyl alcohol complying with the tests and standards for benzyl alcohol. Hynson, Westcott and Dunning, Baltimore, Maryland.

Phenmethylol Ampules, 1 per cent.—H. W. and D.—Each ampule contains 5 cc. of a sterile solution of phenmethylol H. W. and D. 1 gm. in physiological

sodium chloride solution 99 gm. Hynson, Westcott and Dunning, Baltimore, Maryland.

Benzyl Alcohol.—Phenmethylol.—An aromatic alcohol occurring as an ester in tolu and other balsams, and produced synthetically. It is being used as a local anesthetic by injection and by application to mucous membrane. It is said to be practically non-irritant and non-toxic in the ordinary concentration and dosage. From 1 to 4 per cent. solutions in physiological sodium chloride solution are commonly used for injection anesthesia.

Phenmethylol Ampules, 2 per cent.—H. W. and D.—Each ampule contains 5 cc. of a 2 per cent. solution of phenmethylol H. W. and D. in physiological sodium chloride solution. Hynson, Westcott and Dunning, Baltimore, Maryland.

Phenmethylol Ampules, 4 per cent.—H. W. and D.—Each ampule contains 5 cc. of a 4 per cent. solution of phenmethylol H. W. and D. in physiological sodium chloride solution. Hynson, Westcott and Dunning, Baltimore, Maryland. (*Jour. A.M.A.*, October 19, 1918, p. 1313).

Pneumococcus Antigen (*Rosenow*), Lilly.—A pneumococcus vaccine prepared by digesting a suspension of pneumoacocci until the bacteria are partially autolyzed. E. C. Rosenow believes that the protective power of this vaccine is greater than that of one prepared in the usual way. It is marketed in 5 cc. vials, each cc. containing 20 million partially autolyzed pneumococci. Eli Lilly and Co., Indianapolis (*Jour. A.M.A.*, October 26, 1918, p. 1407).

In a recent number of the "Presse Medicale" for January 31, 1918, Lapersonne advocates the use of Chlorazene as a disinfectant in the treatment of ocular infections, such as purulent ophthalmia and corneal ulcers. He found that this antiseptic gave very successful results and was virtually free from irritating effect even in strong solutions, in fact he uses it in a concentration of one per cent. and sometimes even stronger. However, for ordinary eye work a solution of 1:1000 to 1:250 will be found sufficiently strong, and this will give results which can not be obtained from boracic acid or from the simpler and much feebler antiseptics now generally in use.

Chlorazene is becoming more and more widely used as an antiseptic for virtually all purposes. It is manufactured by The Abbott Laboratories, Chicago, Illinois.

"OH SAY, CAN YOU?"

Oh, say, can you sing from the start to the end,
What so proudly you stand for when orchestras play it;
When the whole congregation, in voices that blend,
Strike up the grand hymn, and then torture and slay it
How they bellow and shout when they're first starting out,
But "the dawn's early light" finds them floundering about,
'Tis "The Star-Spangled Banner" they're trying to sing,
But they don't know the words of the precious old thing.

Hark—The "twilight's last gleaming" has some of them stopped,
But the valiant survivors press forward serenely
To "the ramparts we watched," where some others are dropped
And the loss of the leaders is manifest keenly.
Then "the rockets' red glare" gives the bravest a scare,
And there's few left to face the "bombs bursting in air-"—
'Tis a thin line of heroes that manage to save
The last of the verse and "the home of the brave."

HUSH! HUNS ARE SEVEN MILES AWAY.

An American colonel, newly arrived in France, on his first tour of inspection, approached a sentinel squatting behind a hedge and started to question him.

The Yankee shot back a reply in a husky whisper. Immediately the colonel flattened out on the ground with more haste than dignity.

After exchanging a few breathless whispers with the sentinel, the colonel whispered:

"How far are the Huns from here?"

"About seven miles," the sentinel whispered back.

"Then why the —— are you whispering?" the officer stormed.

"Been like this for weegs; godda heluva gold," replied the soldier, wiping his nose.

There are times when the greatest of all feats of strength is holding one's tongue, and thus proves that "silence is golden."

Dear Sir:

I am practicing medicine in New York City. How do I file claim for exemption because of need by the community? L. Iar.

Answer—We do not see how you could get away with it. Not unless the remaining 6,000 doctors have all joined the Army.

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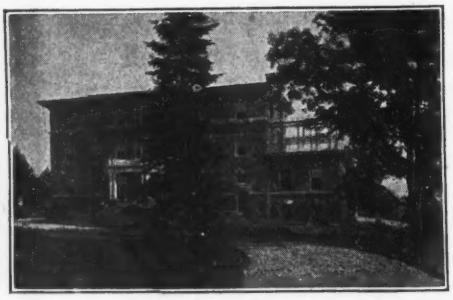

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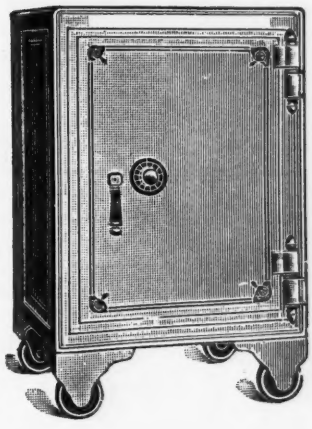

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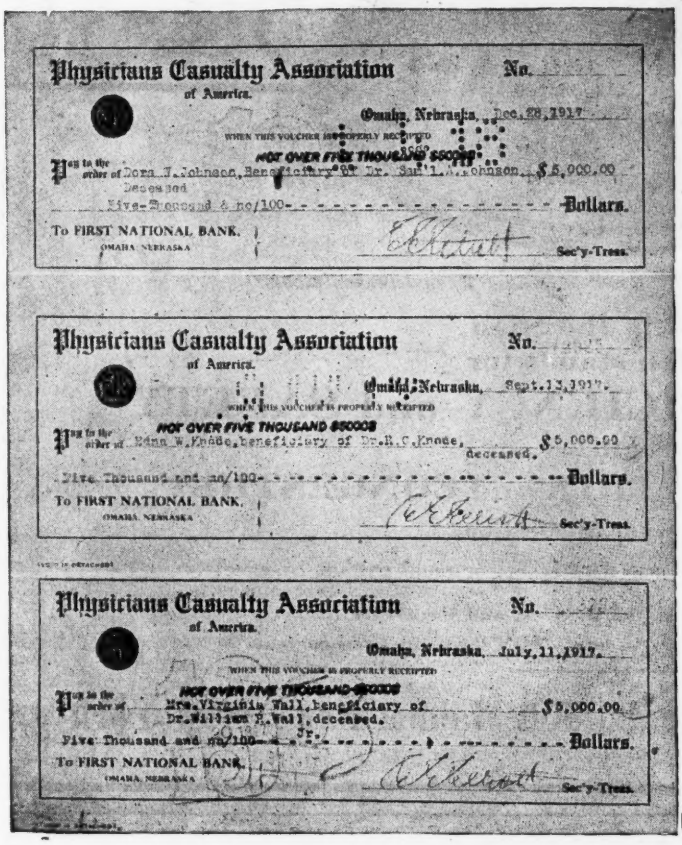

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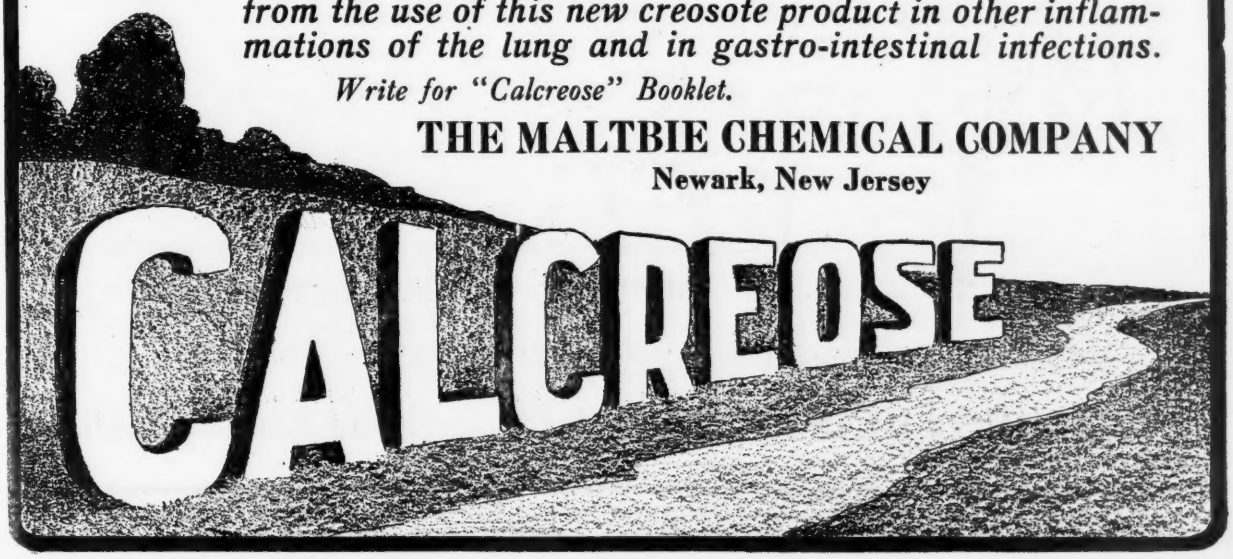

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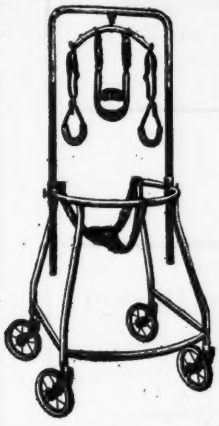

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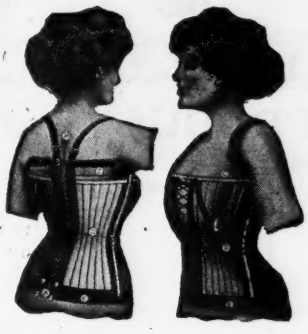

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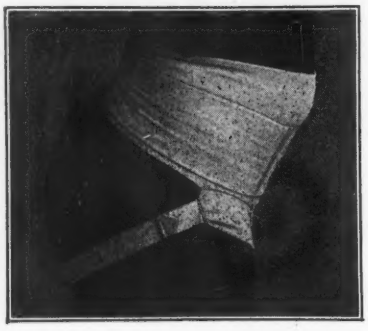

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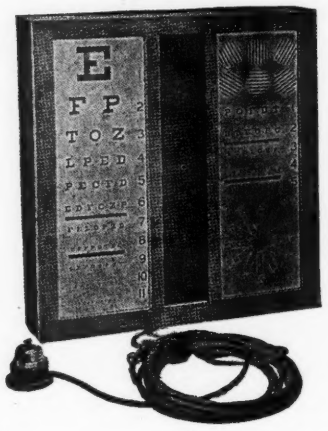

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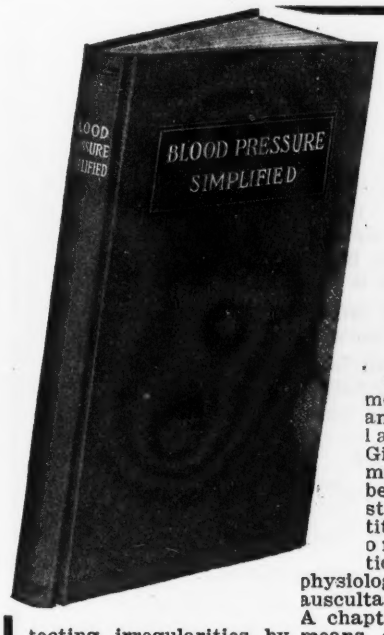

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